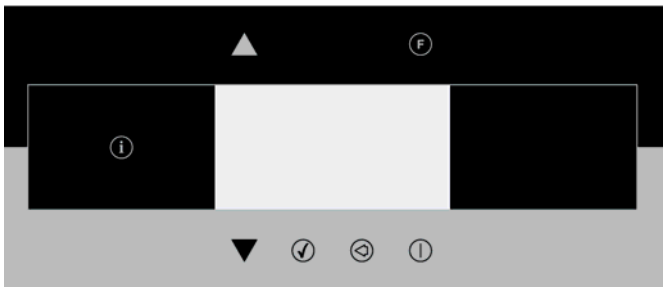
Industrial washer extractors

Freestanding, high spin machines

7 kg	8 kg	11 kg
14 kg	18 kg	24 kg

Rigid mounted, medium spin machines

8 kg	11 kg	14 kg



Original programming manual Xcontrol

540878 B
Publication date: 14 Jan 2013

Machine type selection:

	Dry load capacity		„Machine type“ selection
Freestanding, high spin washer extractors	7 kg / 15 lb	=>	FX65
	8 kg / 18 lb	=>	FX80
	11 kg / 25 lb	=>	FX105
	14 kg / 30 lb	=>	FX135
	18 kg / 40 lb	=>	FX180
	24 kg / 55 lb	=>	FX240
Rigid mounted, medium spin washer extractors	8 kg / 18 lb	=>	RX80
	11 kg / 25 lb	=>	RX105
	14 kg / 30 lb	=>	RX135

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2. WARNINGS AND SYMBOLS

2.1. WARNINGS

BEFORE OPERATING A MACHINE CONTROLLED BY AN ELECTRONIC PROGRAMMER, READ THIS MANUAL. INCORRECT USE CAN RESULT IN SERIOUS INJURIES OR DAMAGE TO THE MACHINE CONTROLS. IGNORING INSTRUCTIONS CAN CAUSE AN INCORRECT MACHINE FUNCTION, WHICH MAY RESULT IN INJURIES OR MACHINE AND/OR LINEN DAMAGES.

– This English version is the original version of this manual. Without this version, the instructions are incomplete. Before installation, operating and maintenance of the machine, read complete instructions thoroughly which means the following manuals: „Original Programming Manual“ and „Original Installation, maintenance and user's manual“. Follow these instructions and keep them handy for later use.

– A machine must be installed by following the „Original Installation, maintenance and user's manual“. Before the first machine start, it must be initialized and tested by a qualified worker.

– The electric service line must not be affected by other electrical loading. A nominal voltage, if loaded or not must work in the range ±10% with a maximum permanent frequency deviation of 1% or a short-time one at 2% of a given frequency. Connecting or starting the machine at an incorrect voltage can damage the programmer.

– The machine must not be exposed to high humidity or extreme high and low temperatures.

– Do not tamper with the controls.

INSTRUCTIONS IN THIS MANUAL DO NOT COVER ALL DANGEROUS SITUATIONS.

IT IS UP TO THE USER TO HANDLE THE MACHINE CAREFULLY.

The manufacturer has the right to change specifications in this manual without prior notice. All the stated information is only for informative purpose and must be considered as general. It is not possible to present all the specific data of the device.

NOTE!

EVERY CIRCUIT BOARD HAS A SERIAL NUMBER AND THE CODE OF THE BOARD (Picture 9.3).

THE MODEL AND SERIAL NUMBER OF THE MACHINE, MUST BE MENTIONED IN ALL CORRESPONDENCE OR INQUIRIES ADDRESSED TO THE DISTRIBUTOR OR MANUFACTURER.

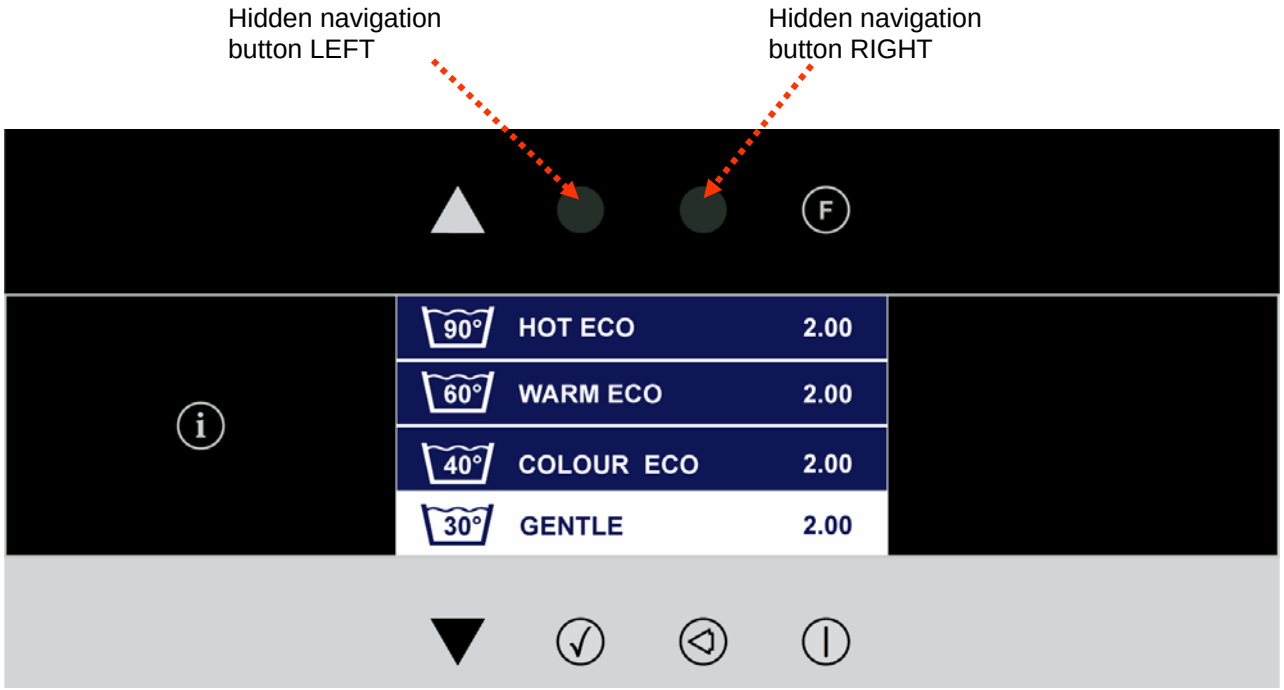
NOTE!

THE PROGRAMMER USES „MACHINE TYPE“ CODES TO SELECT THE DIFFERENT PROGRAMMABLE MACHINES EXECUTIONS.

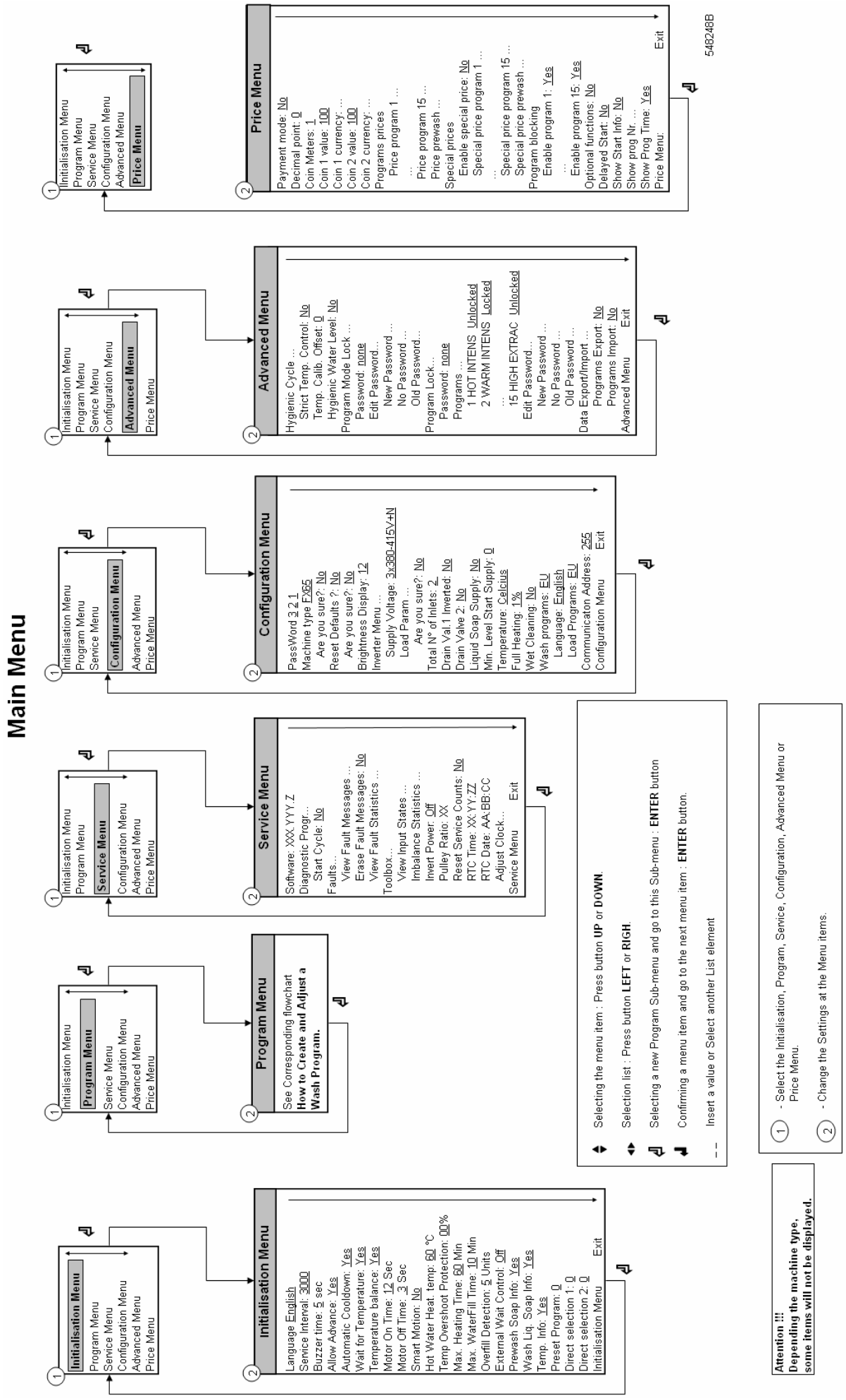
The model number on the machine doesn’t indicate the „machine type“ but must be linked with the description of the „machine type“ letters.

2.2. SYMBOLS USED

❑ BUTTONS



	START (**ADVANCE** function for the OPL version)
	CONFIRM THE SELECTION (ENTER)
	CANCEL THE SELECTION
	MOVE UP
	MOVE DOWN
	SELECTION OF ADDITIONAL FUNCTIONS
	INFO OPL version: program information Coin operated version: User's Manual


Main Menu
Initialisation Menu
Program Menu
Service Menu
Configuration Menu
Advanced Menu
Price Menu
Language English
Service Interval: 3000
Buzzer time: 5 sec
Allow Advance: Yes
Automatic Cooldown: Yes
Wait for Temperature: Yes
Temperature balance: Yes
Motor On Time: 12 Sec
Motor Off Time: 3 Sec
Smart Motion: No
Hot Water Heat. temp: 60 °C
Temp Overshoot Protection: 00%
Max. Heating Time: 60 Min
Max. WaterFill Time: 10 Min
Overfill Detection: 5 Units
External Wait Control: Off
Prewash Soap Info: Yes
Wash Liq. Soap Info: Yes
Temp. Info: Yes
Preset Program: 0
Direct selection 1: 0
Direct selection 2: 0
Initialisation Menu Exit
See Corresponding flowchart
How to Create and Adjust a Wash Program.
Software: XXX.YYY.Z
Diagnostic Progr...
Start Cycle: No
Faults...
View Fault Messages ...
Erase Fault Messages: No
View Fault Statistics ...
Toolbox...
View Input States ...
Imbalance Statistics ...
Invert Power: Off
Pulley Ratio: XX
Reset Service Counts: No
RTC Time: XX:YY:ZZ
RTC Date: AA:BB:CC
Adjust Clock...
Service Menu Exit
PassWord 3 2 1
Machine type EX65
Are you sure?: No
Reset Defaults ?: No
Are you sure?: No
Brightness Display: 12
Inverter Menu ...
Supply Voltage: 3x380-415V+N
Load Param ...
Are you sure?: No
Total N° of Inlets: 2
Drain Val.1 Inverted: No
Drain Valve 2: No
Liquid Soap Supply: No
Min. Level Start Supply: 0
Temperature: Celcius
Full Heating: 1%
Wet Cleaning: No
Wash programs: EU
Language: English
Load Programs: EU
Communicaton Address: 255
Configuration Menu Exit
Hygienic Cycle ...
Strict Temp. Control: No
Temp. Calib. Offset: 0
Hygienic Water Level: No
Program Mode Lock ...
Password: none
Edit Password...
New Password ...
No Password ...
Old Password...
Program Lock...
Password: none
Programs ...
1 HOT INTENS Unlocked
2 WARM INTENS Locked
...
15 HIGH EXTRAC Unlocked
Edit Password...
New Password ...
No Password ...
Old Password ...
Data Export/Import ...
Programs Export: No
Programs Import: No
Advanced Menu Exit
Payment mode: No
Decimal point: 0
Coin Meters: 1
Coin 1 value: 100
Coin 1 currency: ...
Coin 2 value: 100
Coin 2 currency: ...
Programs prices
Price program 1 ...
...
Price program 15 ...
Price prewash ...
Special prices
Enable special price: No
Special price program 1 ...
...
Special price program 15 ...
Special price prewash ...
Program blocking
Enable program 1: Yes
...
Enable program 15: Yes
Optional functions: No
Delayed Start: No
Show Start Info: No
Show prog Nr. ...
Show Prog Time: Yes
Price Menu: Exit
548248B
Selecting the menu item : Press button UP or DOWN.
Selection list : Press button LEFT or RIGH.
Selecting a new Program Sub-menu and go to this Sub-menu : ENTER button
Confirming a menu item and go to the next menu item : ENTER button.
Insert a value or Select another List element
- Select the Initialisation, Program, Service, Configuration, Advanced Menu or Price Menu.
- Change the Settings at the Menu items.
Attention !!!
Depending the machine type, some items will not be displayed.

3. BASIC DESCRIPTION OF CONTROLS

3.1. GENERAL

❑ THE CONTROL OFFERS:

- 15 pre-programmed programs.
- Control of signal voltages for external pumps or liquid supply dispensers.
- Redistribution of the garments to avoid imbalance.
- Automatic temperature balance during the water fill process.
- Setting the machine options and configuration.
- Multiple languages can be selected (one at a time).

❑ IN OPERATION THE FOLLOWING DATA IS DISPLAYED :

- The selected program.
- The active wash step.
- The remaining program time.
- Wash cycle progression bar.
- Indication of wait for heat (if selected).
- Diagnostic messages.

❑ THE OPERATION MENU :

- A program can be manually Shortened, Extended, Stopped.
- A pause can be programmed.
- A direct operation of selected components (water valves, etc.).
- Program overview.
- Service information.

❑ THE HARDWARE AND SOFTWARE OF THE WASH COMPUTER

- Easy operation by a comprehensive keypad.
- The hardware contains 2 electronic board.
- The wash computer with graphic LCD display.
- The control software of the washing machine is stored in the internal memory of the wash computer and it can be easily adjusted (USB flash drive).
- The Wash Programs are kept in EEPROM memory (non-volatile memory).
- Direct control of liquid-detergent pumps.

3.2. SPECIFIC

❑ The PROGRAM Menu is designated for:

- the creation of a specific **name** for a wash program.
- the creation and implementation of a **new** wash program step by step.
- **editing** a wash program step by step.
- **inserting** and **deleting** steps in the wash program.
- **copying** a wash program.
- **deleting** a wash program.
- inspecting the wash program by the **view** function.

❑ The CONFIGURATION Menu is designated for :

- the selection of the **machine type**.
- **loading** the default **factory settings** for the CONFIGURATION and INITIALIZATION menu.
- the selection of the **Brightness** of the **display**.
- the selection of the **power supply voltage** of the washing machine.
- **loading** the frequency **inverter parameters**.
- **erasing** all the programmed **wash programs** (reset Wash program EEPROM memory).
- **loading** the **standard wash programs**.
- the selection of the **number** of wash machine **water supply inlets**.
- the selection of a **second drain valve**. (water recycling system)
- the selection if **external liquid pumps** have been connected to the washing machine.
- the selection if the **temperature** must be displayed in degrees **Celsius** or degrees **Fahrenheit**.
- the selection **Full Heating**.
- the selection of **Wet Cleaning** (very low programmable water levels).
- the selection of the **minimum level start supplies**.

❑ The INITIALIZATION Menu is designated for :

- the selection of the displayed **Language**.
- programming the **Service due** value.
- the selection of the **Buzzer time** interval.
- the selection of the **Advance** function.
- the selection of the **Wait for temperature** function.
- the selection of the **Manual override** function.
- the selection of the **Temperature balance** function.
- programming the **Default Motor On** and **Off times** for reversing wash action.
- the selection of the **Automatic Cool-down** function.
- programming the **Boiler temperature** (hot water supply).
- programming the **Temperature Overshoot Protection** value.
- programming the **Maximum Heating time** value.
- programming the **Maximum Fill time** value.
- programming the **Maximum Level overfill** value.

❑ The SERVICE Menu is designated for :

- the inspection of the **error messages** log register and the list with statistics.
- activating the **power** of the frequency inverter.
- the inspection of the functionality of the electric **input** signals.
- resetting the **Cycle counter**.

❑ The DIAGNOSTIC Menu is designated for:

- running a **Diagnostic Program**.

❑ The ADVANCED Menu is designated for:

- special optional applications

❑ **The PAYMENT Menu is designated for:**

- Selection of the payment mode
- Setting the value of coins and currency
- Setting the prices of programs (including special prices)
- Disabling (blocking) of programs
- Optional functions
- Type of displaying the program information

3.3. ENTERING AND CHANGING VALUES UTILIZING THE Xcontrol KEYPAD

3.3.1. ENTERING A NUMERIC VALUE

Use the navigation buttons LEFT and RIGHT and choose the position which you want to enter (change). Then use the FUNCTION SELECTION button and enter the required value. Use the CONFIRM SELECTION button to confirm the entered value.

EXAMPLE: how to enter the number 321:

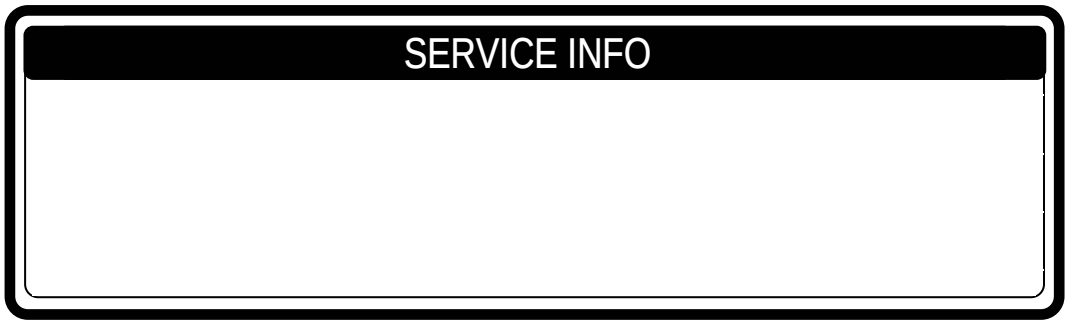
1. Use the LEFT button to move the cursor into the position of the digit for single units
2. Use the FUNCTION SELECTION button and set the digit to 1
3. Use the RIGHT button to move the cursor into the position of the digit for tens
4. Use the FUNCTION SELECTION button and set the digit to 2
5. Use the RIGHT button to move the cursor into the position of the digit for hundreds
6. Use the FUNCTION SELECTION button and set the digit to 3
7. Use the CONFIRM SELECTION button to finish the process of entering the value

3.3.2. ENTERING A LOGICAL VALUE AND SELECTION FROM A LIST

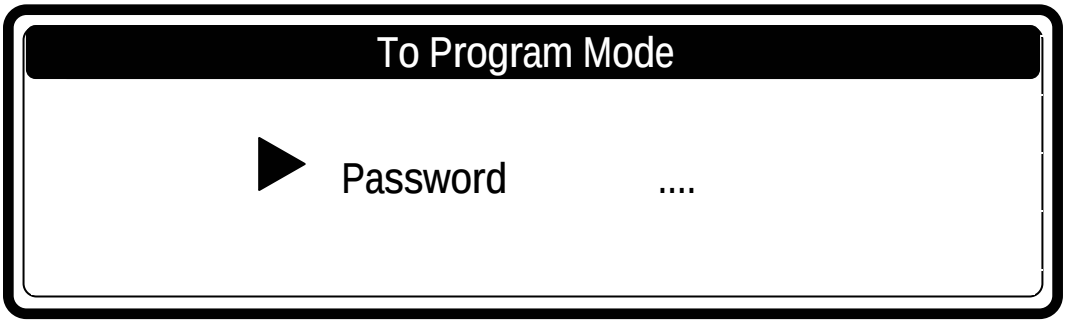
In order to enter (change) a logical value or to select an item from a list, use the hidden navigation buttons LEFT and RIGHT. Use the CONFIRM SELECTION button to confirm the entered value.

3.4. HOW TO GET INTO THE SETUP MODE

1. Press the buttons LEFT and FUNCTION SELECTION at the same time.
2. Release the LEFT button and then, after one second, release the FUNCTION SELECTION button.
3. The display shows Service Info.



4. Press the buttons LEFT and RIGHT at the same time.
5. The display shows the main menu.
   If the password has been activated, you will have to enter the correct password first.



How to leave a setup mode

When the „Main Menu“ screen is shown.

Press the INFO button on the keypad. Then you will return to “Run Mode“ and the program overview is shown.

15 Wash Programs - 99 Steps

Program 1	Program 2	Program 3	. . .	Program 15
Name Prog	Name Prog	Name Prog		Name Prog
Step 1	**Step 1**	**Step 1**	. . .	**Step 1**
Wash Sequence	Wash Sequence	Wash Sequence		Wash Sequence
Drain/ Extraction Sequence	Drain/ Extraction Sequence	Drain/ Extraction Sequence		Drain/ Extraction Sequence
Step 2	**Step 2**	. . .		**Step 2**
Wash Sequence	Wash Sequence			Wash Sequence
Drain/ Extraction Sequence	Drain/ Extraction Sequence			Drain/ Extraction Sequence
Step 3	. . .			**Step 3**
Wash Sequence				Wash Sequence
Drain/ Extraction Sequence				Drain/ Extraction Sequence
. . .				. . .
Step 99				**Step 99**
Wash Sequence				Wash Sequence
Drain/ Extraction Sequence				Drain/ Extraction Sequence
Tumble Sequence	**Tumble Sequence**	**Tumble Sequence**	. . .	**Tumble Sequence**

Available Wash Sequences : Prewash, Wash, Cooldown, Rinse, Final Rinse, Soak, Spray, No Wash

AVAILABLE DRAIN/EXTRACTION SEQUENCES : **DRAIN, EXTRACT, NO DRAIN, STATIC DRAIN, REV DRAIN**

3.5. THE CREATION OF A WASH PROGRAM

- **A Wash Program is built up step by step.**
- **Each step always consists of a Wash sequence and a Drain/Extraction sequence.**

❑ Programming the Wash sequence :

- First choose the type of Wash sequence.

  - **PREWASH**
  - **WASH**
  - **COOLDOWN**
  - **RINSE**
  - **FINAL RINSE**
  - **SOAK**
  - **SPRAY**
  - **No WASH**

- Then program all the related functions of the sequence.

  The available functions are :

  - **Temperature**
  - **Water Level**
  - **Water Inlet Valves**
  - **The Wash Speed**
  - **The Reversing Interval times**
  - **Supplies**
  - **Sequence Time (length of step)**
  - **Drain valve 1 - 2**
  - **Pause Signal**

- You will notice that each step has default settings.
  This feature is very helpful as most of the newly created programs will not require changes to be made to the suggested values.

❑ Programming the Drain sequence :

- After programming the Wash sequence, next program the Drain/Extraction sequence.

  - **DRAIN**
  - **EXTRACTION**
  - **No DRAIN**
  - **STATIC DRAIN**
  - **REVERSING DRAIN**

- Then program all the related functions of the Drain/Extraction sequence.

  The available functions are :

  - **Sequence Time** (length of step)
  - **Speed**
  - **Drain valve 1 - 2**

- As you will notice it's also possible to skip a sequence between two other sequences by programming **No WASH** or **No Drain**.

Example : The **No drain** sequence should be programmed between a wash and a cool-down sequence.

⚠ **ATTENTION!**
A MORE DETAILED EXPLANATION FOR THE SPECIFIC SEQUENCES CAN BE FOUND IN CHAPTER 5.

❑ The Tumble sequence :

- The wash cycle will always end with the Tumble sequence.
- The tumble sequence takes 30 Seconds, then the program is finished and the door can be opened.
- **The Tumble sequence cannot be skipped**.

3.6. PROGRAMMING THE FUNCTIONS

❑ Limits

- To ensure the correct functionality of the washing machine you have to program values within certain limits.
- If you program a value that falls below the minimal or above the maximal programmable limit then the new value will not be accepted and the previous value stays valid.

❑ Programming the Water Temperature

- Limits
  - Minimum value : 1 °C
  - Maximum value : 45°C for the PREWASH and SOAK and 92°C for the WASH sequence.
  - For RINSE, FINAL RINSE and SPRAY no Temperature can be programmed.

❑ Programming the Water Inlet valves

- Depending on the programmed temperature the water inlet valves are suggested.
- While the tub is filling with water, the computer controls the water temperature. By switching on and off the hot and cold water inlet valves the correct water temperature is obtained.
- For machines with a Top Soap Dispenser you have to consider that by programming the water inlet valves, at the same time, you are also selecting the soap Box at which the soap must be added.
- If you want to program a wash sequence with :
  - Cold Water : only Cold Inlet Valves must be programmed
  - Warm or Hot water : Cold **and** Hot Inlet Valves must be programmed

The cold water inlet valves

Inlet Valve 1	corresponds with	soap box for a Prewash
Inlet Valve 2	corresponds with	soap box for a Wash - detergent
Inlet Valve 3	corresponds with	soap box for a Wash - liquid soap
Inlet Valve 4	corresponds with	soap box for a Final Rinse
Inlet Valve 7	is a direct Inlet Valve and speeds up the water fill process	

The hot water inlet valves

Inlet Valve 5	corresponds with	soap box for a Prewash
Inlet Valve 6	corresponds with	soap box for a Wash - detergent
Inlet Valve 8	corresponds with	soap box for a Wash - liquid soap

How to select inlet valves : EXAMPLE

◆ For a Prewash :	Programmable temperature: Inlet Valve 1 (cold) and/or 5 (hot) and/or 7 (cold)	1 - 45°C soap box for a Prewash direct Inlets
◆ For a Wash :	Programmable temperature: Inlet Valve 2 (cold) and/or 6 (hot) and/or 7 (cold)	1 - 92°C soap box for a Wash - detergent direct Inlets
◆ For a Rinse :	Inlet valves 1+2+7 (cold)	No detergent is added
◆ For a Final Rinse :	Inlet valve 4 and/or 7 (cold)	soap box for a Final rinse direct inlets

⚠ ATTENTION!

FOR MACHINES WITH LIQUID SUPPLY PUMPS, DIRECT WATER INLET VALVE 7 MUST BE PROGRAMMED BECAUSE THE LIQUID IS ADDED AT THE DIRECT WATER INLET CHANNEL. FOR WASHING MACHINES WITH WATER RECYCLING, THE WATER RECYCLING SUPPLY MUST BE CONNECTED TO INLET VALVE 5 OR 7.

❑ Programming the water level

– Water level Limits

- See table 3.6.A. The values are different for each machine type.
- Minimum value: above the heating elements and the temperature sensor
- Maximum value: half the wash drum

– Normal Low Level, Normal High Level

- The Normal Low Level is recommended for the PREWASH, WASH and SOAK sequences.
- The Normal High Level is recommended for the RINSE and FINAL RINSE Sequences.
- At the COOLDOWN sequence, the Wash Computer makes use of a low water level and is draining the water automatically.
- At the Spray sequence, the Drain valve stays open.

– Wet Cleaning selection Configuration menu

- It's possible to program a level below default minimum programmable level. (see table 3.6.A).
- The heating will not be functional for a water level below the standard minimum programmable water level.

⚠ ATTENTION!

FOR WOOLENS AND OTHER DELICATE LINEN A NORMAL HIGH WATER LEVEL IS RECOMMENDED.

THE ECONOMY WASH PROGRAMS SHOULD ONLY BE USED FOR LIGHTLY SOILED AND/OR SMALLER VOLUMES OF LAUNDRY. IN OTHER CASES, THE PROGRAM WILL GIVE POOR WASHING QUALITY.

Programmable water level units related to the amount of water in the tub

Machine type		FX65	FX80	FX105	FX135	FX180	FX240
Programmed water LEVEL (Water level height in units)	7					8 ℓ	14,5 ℓ
	8					10 ℓ	17,5 ℓ
	9	9,5 ℓ	10,5 ℓ	10,5 ℓ	12 ℓ	12,5 ℓ	21 ℓ
	10	① 11 ℓ	12 ℓ	12 ℓ	14,5 ℓ	14,5 ℓ	24 ℓ
	11	② 13 ℓ	① 13,5 ℓ	14 ℓ	16,5 ℓ	17 ℓ	28 ℓ
	12	**③ 14,5 ℓ**	② 15,5 ℓ	① 16 ℓ	① 19 ℓ	① 19,5 ℓ	① 31,5 ℓ
	13	**④ 16 ℓ**	**③ 17 ℓ**	② 18 ℓ	② 21,5 ℓ	② 22 ℓ	② 33,5 ℓ
	14	18 ℓ	**④ 19 ℓ**	**③ 20 ℓ**	24 ℓ	**③ 25 ℓ**	**③ 37 ℓ**
	15	19,5 ℓ	21 ℓ	**④ 22 ℓ**	**③ 27 ℓ**	**④ 28 ℓ**	**④ 41 ℓ**
	16	21,5 ℓ	23 ℓ	24,5 ℓ	**④ 29,5 ℓ**	31,5 ℓ	45 ℓ
	17	23,5 ℓ	25,5 ℓ	27 ℓ	32,5 ℓ	34,5 ℓ	48,5 ℓ
	18	25,5 ℓ	27,5 ℓ	29,5 ℓ	36 ℓ	38 ℓ	52 ℓ
	19	27,5 ℓ	29,5 ℓ	32 ℓ	39 ℓ	41 ℓ	54,5 ℓ
	20	29 ℓ	31,5 ℓ	34 ℓ	42,5 ℓ	44,5 ℓ	59,5 ℓ
	21	31 ℓ	33,5 ℓ	37 ℓ	45,5 ℓ	48 ℓ	64 ℓ
	22	33,5 ℓ	36 ℓ	39,5 ℓ	48,5 ℓ	51,5 ℓ	68,5 ℓ
	23	36 ℓ	38,5 ℓ	42 ℓ	52 ℓ	55 ℓ	73 ℓ
	24	38,5 ℓ	40,5 ℓ	45 ℓ	55 ℓ	58,5 ℓ	77,5 ℓ
	25	40,5 ℓ	43 ℓ	48 ℓ	58,5 ℓ	62,5 ℓ	83 ℓ
	26	43 ℓ	46 ℓ	51 ℓ	62 ℓ	66 ℓ	86,5 ℓ
	27	46 ℓ	49 ℓ	54 ℓ	65 ℓ	69,5 ℓ	91 ℓ
	28	49 ℓ	52 ℓ	57 ℓ	68,5 ℓ	73 ℓ	95,5 ℓ
	29	52 ℓ	55 ℓ	60,5 ℓ	71,5 ℓ	76,5 ℓ	100,5 ℓ
	30			63,5 ℓ	75 ℓ	80 ℓ	105,5 ℓ

① Economic Low Level
② Economic High Level
③ Normal Low Level
④ Normal High Level

Programmed water LEVEL (Water level height in units)	Programmable water level units related to the amount of water in the tub		
Machine type	**RX80**	**RX105**	**RX135**
7			
8			
9	9 ℓ	10 ℓ	10,5 ℓ
10	10,5 ℓ	12 ℓ	12,5 ℓ
11	① 12,5 ℓ	14 ℓ	15,5 ℓ
12	② 14,5 ℓ	① 16 ℓ	① 17,5 ℓ
13	**③ 16 ℓ**	② 18 ℓ	② 20 ℓ
14	**④ 18,5 ℓ**	**③ 20 ℓ**	**22,5 ℓ**
15	20,5 ℓ	**④ 22,5 ℓ**	**③ 25,5 ℓ**
16	22,5 ℓ	25 ℓ	**④ 28,5 ℓ**
17	25 ℓ	27,5 ℓ	31 ℓ
18	27 ℓ	30 ℓ	34 ℓ
19	29 ℓ	32 ℓ	37 ℓ
20	31 ℓ	35 ℓ	40 ℓ
21	33 ℓ	37 ℓ	43 ℓ
22	35,5 ℓ	40 ℓ	46 ℓ
23	37,5 ℓ	42,5 ℓ	49,5 ℓ
24	40 ℓ	45 ℓ	53 ℓ
25	42 ℓ	47,5 ℓ	56 ℓ
26	44,5 ℓ	50 ℓ	59,5 ℓ
27	46,5 ℓ	52,5 ℓ	62,5 ℓ
28	48,5 ℓ	55 ℓ	65,5 ℓ
29	51 ℓ	57,5 ℓ	68,5 ℓ
30		60 ℓ	72 ℓ

① Economic Low Level
② Economic High Level
③ Normal Low Level
④ Normal High Level

Machine type	Minimum programmable level	Normal Low Level Default value	Normal High Level Default value	Maximum programmable level
FX 65	9	12	13	29
FX 80	9	13	14	29
FX 105	9	14	15	30
FX 135	9	15	16	30
FX 180	7	14	15	30
FX 240	7	14	15	30
RX 80	9	13	14	29
RX 105	9	14	15	30
RX 135	9	15	16	30

Tab.3.6.A. Programmable water Level

	Wash Speed			Spin Speed				Low spin Speed
Machine type	**default RPM**	min RPM	max RPM	**default RPM**	min RPM	locking RPM	max RPM	default RPM
FX65	**050**	10	60	**1120**	150	91-149	1165	400
FX80	**050**	10	60	**1120**	150	91-149	1165	400
FX105	**046**	10	60	**1035**	150	91-149	1075	400
FX135	**046**	10	60	**1035**	150	91-149	1075	400
FX180	**42**	10	60	**940**	150	91-149	980	370
FX240	**42**	10	60	**940**	150	91-149	980	370
RX80	**50**	10	60	**780**	150	91-149	820	350
RX105	**46**	10	60	**720**	150	91-149	760	350
RX135	**46**	10	60	**720**	150	91-149	760	350

Tab.3.6.B. Speed of machines with frequency inverter.

❑ Programming the Wash Speed

- Standard reversing wash speed is between ≅ 40 and 50 RPM. (≅ Verify exact value at table 3.6.B.)
- For some special applications the drum should only turn very slowly.

- Speed Limits

- The minimum programmable wash speed is 10 RPM.
- The maximum programmable wash speed is 40 - 60 RPM, depending on machine size.

❑ Programming Extraction speed

Extraction ≅ [150 - 1165] RPM

- An Intermediate spin between two sequences should be about ½ of the max spin.
- Between 90 and 150 RPM (≅ Verify exact value at table 3.6.B.) it's not allowed to program a steady speed, as the machine could VIBRATE TOO MUCH.

- Speed Limits

- Check table 3.6.B with the minimum and maximum speed limits. The limits differ depending on the maximum allowed g-force at high spin for each washing machine type.

❑ Programming Supplies

- Up to 4 Supplies can be programmed at the same time in a sequence.
- If Liquid soap pumps have been installed on the washing machine, then these pumps will be activated by programming a time value for the corresponding supply signal 1, 2, 3, 4, 5, 6, 7, 8.

- Time Limits

- The maximum programmable time is 99 Seconds
- If the time is 0 Seconds then the supply will NOT be activated at the wash process.

⚠ **ATTENTION!**

IF FOR SOME SPECIAL APPLICATION MORE THAN 4 SUPPLIES MUST BE PROGRAMMED IN THE SAME SEQUENCE, THIS CAN BE SOLVED BY PROGRAMMING THE SAME SEQUENCE TWICE; ONE AFTER THE OTHER. SPLIT THE WATER LEVEL (SO IT WILL TAKE WATER FOR THE SECOND FILL, say 60%, 100%), STEP TIME, AND THE NUMBER OF SUPPLIES, OVER THE TWO SUBSEQUENT SEQUENCES. PROGRAM A „NO DRAIN" BETWEEN THE TWO SEQUENCES TO AVOID DRAINING THE WATER. SET TEMPERATURE THE SAME FOR BOTH PARTS.

❑ Programming the Motor On and Off times for Reversing

- The standard Reversing Motor On and Off times at Wash speed is 12 Seconds On and 3 Seconds Off.
- For Delicates and Woolens it's recommended to program a gentle wash action with a Reversing On time of 3 Seconds and an Off time of 12 Seconds.

❑ Programming the Sequence time.

- The sequence time starts running after the water level is reached.
- If wait for Temperature has been selected, the sequence time starts only running once the programmed temperature has been reached at the heating process.
- For a Cooldown Sequence, the programmed time corresponds with the time for decreasing the water temperature.

Recommendation :

At least a cooldown of 3 minutes must be programmed. And to avoid the shrinking of the garments, it's recommended to program the time so that the temperature will decrease with about 3°C for each minute.

⚠ **ATTENTION!**
FOR A SPRAY SEQUENCE, IF A SUPPLY HAS BEEN PROGRAMMED, THE SEQUENCE TIME CORRESPONDS WITH THE PROGRAMMED SUPPLY TIME.

❑ Signal

- The signal should be programmed when a running wash cycle has to be interrupted.
- The Buzzer will be activated to alert the operator.
- For most cases, the operator interrupts a program to fill the soap box an additional time.
- The program interruption will always occur at the end of a step.

4. INITIALIZING THE MACHINE

Initializing the machine goes in four steps:

1. Install the machine mechanically. (See Installation Manual)
2. Select the machine specific settings in the Configuration Menu.
3. Select the operator specific settings in the Initialization Menu.
4. Adjust standard Programs or create new Programs at the Program Menu.

⚠ ATTENTION!
THE INITIALIZATION SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY. AN INCORRECT INITIALIZATION MAY CAUSE SERIOUS INJURIES AND SERIOUS DAMAGE TO THE MACHINE!

⚠ ATTENTION!
BEFORE MAKING CHANGES IN THE CONFIGURATION AND INITIALIZATION MENU READ THIS MANUAL CAREFULLY.
CHANGES YOU HAVE MADE WILL INFLUENCE THE WASH PROGRAM PROCESSES.
WE RECOMMEND BEFORE MAKING CHANGES TO CAREFULLY WRITE DOWN WHAT THE PREVIOUS SETTINGS WERE.

AS THE WASH COMPUTER IS USED FOR A WHOLE RANGE OF WASHING MACHINES, AFTER THE INSTALLATION OF A NEW WASH COMPUTER, YOU NEED TO PROGRAM MACHINE SPECIFIC SETTINGS INTO THE CONFIGURATION MENU. SEE PARAGRAPH 4.2.

AT THE INSTALLATION OF NEW SOFTWARE, AFTER LOADING THE FACTORY SETTINGS (SEE PARAGRAPH 4.2.), YOU NEED TO CHECK THE DEFAULT SETTINGS ONE BY ONE TO FIND OUT IF THEY CORRESPOND WITH THE SETUP AS YOU PREFER.

THE CONFIGURATION AND INITIALIZATION OF THE WASHING MACHINE HAS BEEN DONE AT THE FACTORY. FOR THE CREATION OF NEW PROGRAMS, NO CHANGES HAVE TO BE MADE IN THE INITIALIZATION OR CONFIGURATION MENUS.

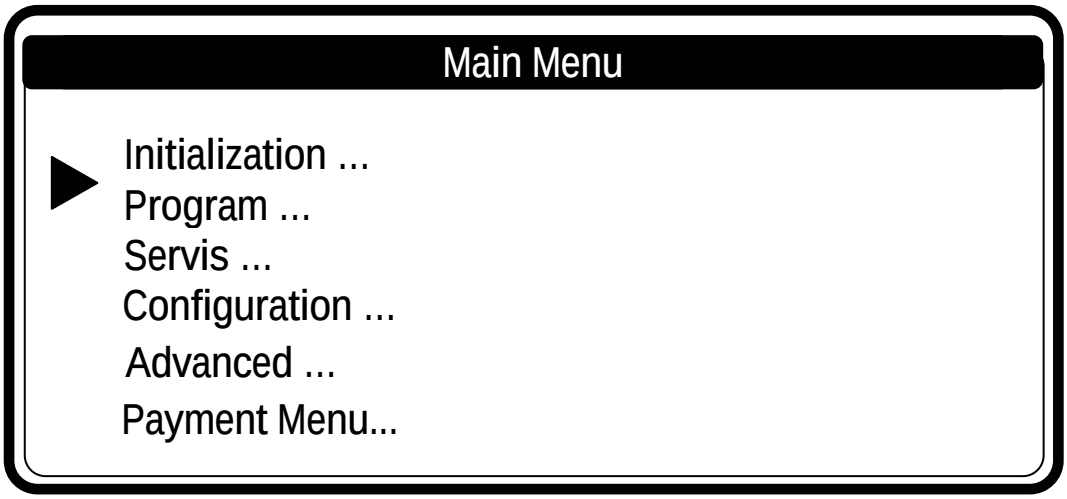
4.1 INITIALIZATION MENU

❑ HOW TO GET INTO THE INITIALIZATION MENU

The initialization menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).

- The program overview is shown.

- Switch the machine to the setup mode (see chapter 3.4.).
- The Main menu is now available.
- The Initialization Menu is the first Menu.



- Press the **ENTER** button to make your selection.
- Now you will see the first menu item.
- By pressing the **ARROW DOWN** or **UP** button you can select the menu items one by one.

Menu Item	Default	Info	Limits
Language	English	Language selection: English, Spanish, French,…	List
Service Interval	3000	Number of cycles at which maintenance is required. 9999: the servicing interval is ignored	1 - 9999
Buzzer Time	5 Sec	The time the Buzzer is beeping at end of wash cycle while „Unload“ is displayed.	0 - 99
Allow Advance	Yes	The Advance function allows to Skip a Sequence or to extend & decrease the time of a sequence.	No / Yes
Automatic Cooldown	Yes	Automatic Cooldown selection. (see info (*)).	No / Yes
Wait for Temp	Yes	Wash Process time is put on Hold as long as the programmed temperature hasn't been reached. Once the temperature has been reached, the wash cycle time will decrease.	No / Yes

Menu Item	Default	Info	Limits
Temperature Balance	Yes	The right water temperature at the water fill process is obtained by switching the cold and hot water inlet valves. For high temperatures extra heating will be required after the fill process. For some special customer applications, it is allowed to switch off the automatic Temperature Balance control.	No / Yes
Motor On Time	12 Sec	At normal wash action, drum turns for 12 seconds. Recommended 3 Sec for Gentle wash action. (= suggested values for the program menu)	1 - 99 Sec
Motor Off Time	3 Sec	At normal wash action, drum is stopped for 3 seconds. Recommended 12 Sec for Gentle wash action. (= suggested values for the program menu)	1 - 99 Sec
Smart Motion	No	This option decreases the drum R.P.M. during water filling therefore the laundry absorbs water faster and washing efficiency increases.	No / Yes
Hot Water Heater Temp.	60 °C	The Hot Water Heater Temperature should correspond with the hot water supply of the washing machine. The value of the hot water supply temperature is required to obtain a correct bath temperature at the water fill process.	50 - 80 °C
Temp. Overshoot Prot.	00 %	To avoid temperature overshoot at steam heating, the % value is the reduced temperature at which the heating is switching off before reaching the target value. In the tub cold and hot water gets mixed and if after 30 seconds the programmed target temperature is not reached, the heating will be started again.	0 - 30 %
Max. Heating Time	60 Min	A diagnostic message is generated by the wash computer when the water hasn't reached the programmed temperature in 60 Minutes. (Err 14) ⚠ **Attention!** **If 99 minutes has been selected, NO error message will be generated at all, even if the heating time exceeds 99 minutes. The machine will only stop heating when the programmed temperature has been reached.**	10 - 90 Min

Menu Item	Default	Info	Limits
Max. Water Fill Time	10 Min	A diagnostic message is generated by the wash computer when the water hasn't reached the programmed level in 10 Minutes. (Err 11) ⚠ **Attention!** **If 99 minutes has been selected, NO error message will be generated at all, even if the heating time exceeds 99 minutes. The machine will only stop filling when the programmed water level has been reached.**	5 - 99 Min
Overfill Detection	5 units	A diagnostic message is generated by the wash computer when the water has reached the programmed level + 5 units. (Err 12) ⚠ **Attention!** **It's strongly recommended that the heating power of the steam installation has enough power to heat the bath quickly. Otherwise the tub will be filled with extra water and an error message will occur that the machine takes more then 5 units extra water. This will also increase the water, energy and detergent supply consumption.** To solve the problem in another way, reduce the programmed target water level so that less energy is needed to heat up the bath and with the extra water of the condensed steam you will wash with a normal amount of water.	3 - 25 units
External Wait Control	Off	Liquid soap supply system: Slection for a washing machine connected to a central liquid soap supply system. Some washing machines are connected to a central liquid soap supply system which can only provide 1 washing machine at a time with liquid soap. This central pump system is able to let Wait the washing machine before continuing the wash process until the central pump system is free to pump the liquid soap supply into the machine. Heating, (for installations with limited power supply): You can disable the heating system of the machine by an external signal. The heating will switch on again and the wash process will continue as soon as the external signal is switched off. Wait: External signal suspends the whole wash process until the external signal gets switched off. Time: External signal stops the count-down of washing process. All functions of wash cycle continue. When the external signal stops, the count-down will continue in a standard manner.	No / Soap Heating / Wait Time

Menu Item	Default	Info	Limits
Prewash Soap Info	Yes	Selection whether the information on soap dosage for prewash should be shown or not.	No / Yes
Wash Liq. Soap Info	Yes	Selection whether the information on liquid soap dosage for the main wash should be shown or not.	No / Yes
Temp. Info	Yes	Selection whether the temperature information of selected program should be displayed.	No / Yes
Preset Program	0	Entering the number of pre-set program. After the wash cycle has finished and the door has been opened, the program selection will be set to the pre-set program. The value "0" means there is no pre-set program.	0..15
Direect selection 1	0	Direct selection 1 is a pre-set program which will start operating when the LEFT button is pressed. The 0 value means there is no pre-set program.	0..15
Direect selection 2	0	Direct selection 2 is a pre-set program which will start operating when the RIGHT button is pressed. The 0 value means there is no pre-set program.	0..15
Exit		Return to Main Menu	

(*) Automatic Cooldown

- To avoid mechanical temperature shock and to extend the life time of your washing machine, after a hot wash, cold water is injected bit by bit. As a result at the end of the hot wash, the temperature will be lowered to about 65°C.
- The automatic cooldown function will only be functional if a hot wash with a temperature above 65°C has been programmed and if a cold water inlet valve is programmed in the next step. When a Cooldown sequence has been programmed, the automatic cooldown will not function.
- The automatic cooldown differs from a normal cooldown sequence. The purpose of a normal cooldown sequence is to avoid the shrinking of the garments. (Takes more time)
  See Chapter 5.

4.2 CONFIGURATION MENU

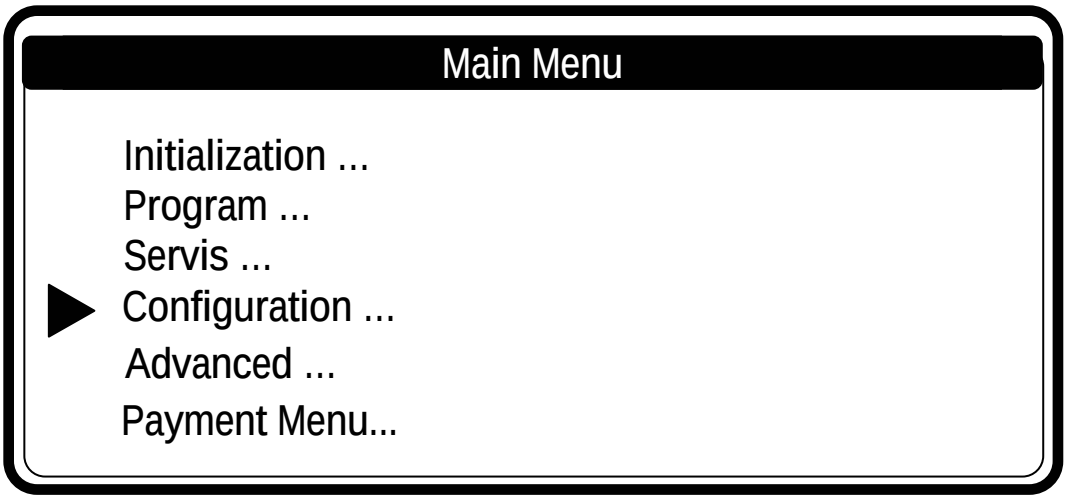
This electronic wash computer has been specially constructed for a wide range of washing machines.
For that reason it must be individually set up with important parameters for various machine types.
Basic machine adjusting is made in the factory.

⚠ **WARNING!**
ONLY A QUALIFIED TECHNICIAN SHOULD CHANGE THE CONFIGURATION SET UP. AN INCORRECT CONFIGURATION CAN CAUSE INJURIES AND SERIOUS MACHINE DAMAGE.

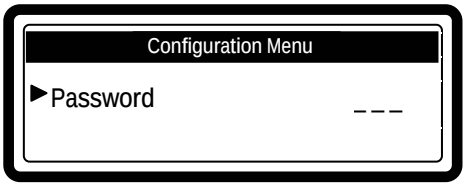
❑ HOW TO GET INTO THE CONFIGURATION MENU

The configuration menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).

The program overview is shown.
Switch the machine to the setup mode (see chapter 3.4.).
The Main menu is now available.
Press the **ARROW DOWN** button to select the Configuration Menu.



Press the **ENTER** button to make your selection.
For the Configuration Menu a Pass-Word is required.



Insert **3 2 1** and Press the **ENTER** button. (For entering numerical values see chapter 3.3.).
Now you will see the first menu item.
By pressing the **ARROW DOWN** or **UP** button you can select the menu items one by one.

Menu Item	Default	Info	Limits
Machine Type Are You Sure ?	FX65 No	Select the right machine type. ☞ Look at Machine Name Plate at the rear of the washing machine. ☞ Confirm that you want to change the machine type. ⚠ **Attention!** **Reset Defaults must (only) be executed for each new installed wash Computer and after selecting a new machine type, to ensure correct EEPROM memory configuration! (just by selecting another machine type the default settings are not reloaded)** ⚠ **Attention!** **By changing the machine type the wash programs kept in EEPROM memory are not changed. After changing the wash machine type it's recommended to erase the program memory and load the standard wash programs again as the wash program settings differ for each machine type.** ⚠ **Attention!** **MAKE SURE THAT YOU HAVE SELECTED THE CORRECT MACHINE TYPE, OTHERWISE THE MACHINE WILL NOT FUNCTION PROPERLY.**	List No / Yes
Reset Defaults ? Are You Sure ?	No No	All the Initialization and Configuration Menu Settings will be reset to its default Factory settings. Should only be used at SETUP of a new wash computer. ☞ Confirm that you want to Reset Defaults. ⚠ **Attention!** **Reset Defaults must (only) be executed for each new installed wash Computer and after selecting a new machine type, to ensure correct EEPROM memory configuration!** ⚠ **Attention!** **BE SURE YOU WANT TO ERASE THE OLD SETTINGS, AS THEY CAN'T BE RECAPTURED.**	No / Yes No / Yes

Menu Item	Default	Info	Limits
Brightness Display	12	The brightness of the display is changed by adjusting the contrast of the optimal viewing angle.	1 - 20
Inverter Menu... Supply Voltage XXXXXXX (Inverter Type) Load Param... Are You Sure ?	No	⚠ **Attention!** **The washing machine can only operate correctly if the right inverter (same as washing machine) has been set in the Configuration menu.** Select the right inverter. ☞ Look at Machine Name Plate on the rear of the washing machine. ☞ Select the Supply Voltage as shown on the Machine Name Plate. The frequency inverter will be selected by default. ☞ Check Inverter Type ⚠ **Attention!** **The washing machine can only perform properly if the inverter contains the right list of inverter parameters. By the wash computer it is possible to load the list of parameters in the inverter. Make sure that the correct Supply Voltage has been selected first.** ⚠ **Attention!** **Loading parameters is only required after installing a new inverter.** Load the inverter Parameters. ☞ Door must be closed. ☞ Check if the SETUP is correct. **- Parameter List Version** **- machine type, inverter type, software version** ☞ Confirm that you want to load the inverter Parameters. ☞ Check status screen while parameters are loaded. **- Sending Param.: 0 - 100 %** **- Verify Param: 0 - 100 %**	List No / Yes

Menu Item	Default	Info	Limits
Total N° of Inlets	2	A washing machine can be delivered with 2 or 3 main water Inlet supplies. A machine with 2 main water inlet supplies is prepared for : - soft warm water - soft cold water A machine with 3 main water inlet supplies is prepared for : - soft warm water - soft cold water - hard or recycled cold water **Depending on this selection other inlet valves will be suggested at the final rinse sequence.** **Depending on this selection other inlet valves will be programmed when the standard programs are loaded.**	2 / 3
Drain Val.1 Inverted	No	If a drain valve 1 with inverted function (normally closed) or a pump is used on the machine, then this item must be set to "Yes".	No / Yes
Drain Valve 2	No	Some machines function with water recovery are equipped with a second drain valve. If this second drain valve is a normal Closed drain Valve, then drain valve 2 must be Selected Yes.	No / Yes
Liquid Soap Supply	No	Some washing machines function with external Liquid soap supplies and others do not. To program External Liquid soap supplies at the Program Menu, this selection must be Yes.	No / Yes
Min. Level Start Supply	0 units	Soap Supply signals are only started when the pre-set „Minimum water level Start Supply" has been reached. Minimum programmable level, see water consumption table 3.6.A.	0 - Minimum progr. level
Temperature	Celsius	Select Celsius or Fahrenheit, depending if you prefer that the temperature is displayed in degrees Celsius or degrees Fahrenheit.	Celsius / Fahrenheit
Full Heating	1 %	This function allows to reduce the energy consumption at long hot washes. When the heating has reached the programmed target temperature, heating will be restarted when the bath temperature goes below the temperature hysteresis. - Full Heating 100 %, the heating will be restarted until the end of the hot wash sequence. - Full Heating 1 %, the heating will not be restarted once the target temperature has been reached. - Full Heating 67 %, the heating will be switched Off 1/3 before the end of the hot wash sequence. ⚠ **Attention!** **In case of a hygienic program, 100% must be selected.**	1 - 100 %

Menu Item	Default	Info	Limits
Wet Cleaning	No	Selection Wet Cleaning allows to program water levels below the standard minimum programmable levels. The heating will not be functional for a water level below the standard minimum programmable water level.	No / Yes
Wash programs Language Load programs	EU English EU	The manufacturer provides standard set of programs (EU) and several customer sets. To change a set of programs, select a set from a list of available sets and confirm the selection. ⚠ Warning! After the selection of a different washing machine has been made, it is advisable to load the standard programs in the memory. Thus you will make sure, that the machine is not operated with incorrect water levels or drum rotational speed.	List of available washing sets
Communication Addr.	255	Each washing machine in the serial RS485 washing machine communication network must have a unique Communication Address. (Master - Slave) ⚠ **Attention!** **If 2 or more machines have the same Communication Address the communication network will not function properly.**	1 - 255
Exit		Return to Main Menu	

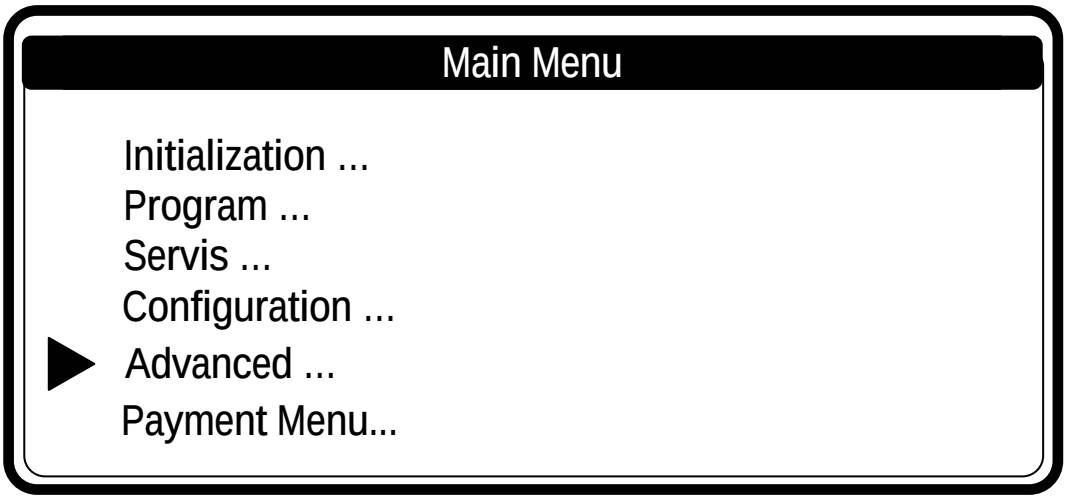
4.3 ADVANCED MENU

Some special wash computer applications are only accessible by the Advanced Menu.
In the advanced menu you can find the not frequently used, optional and special applications.

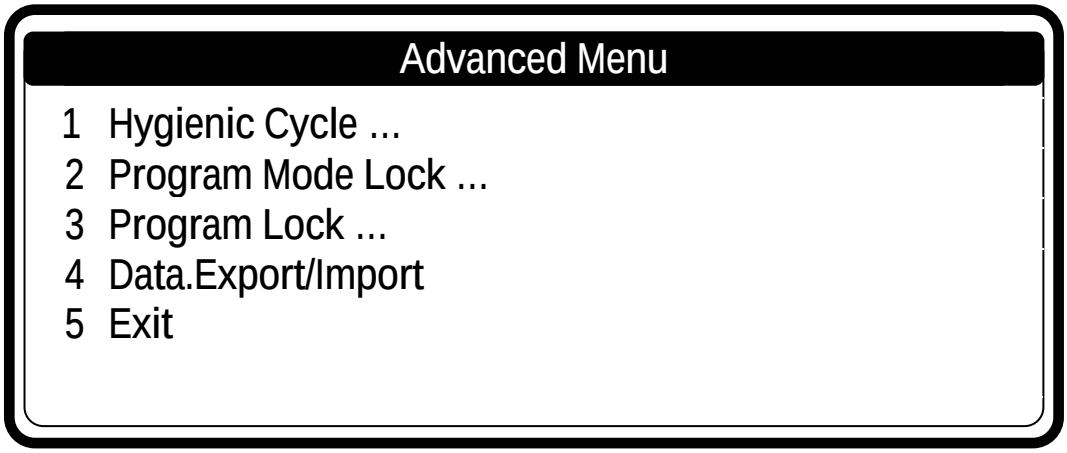
❑ HOW TO GET INTO THE ADVANCED MENU

The Advanced menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).

The program overview is shown.
Switch the machine to the setup mode (see chapter 3.4.).
The Main menu is now available.
Select the Advanced Menu after turning it on in the Configuration menu.



The advanced menu contains a list of extra menu's with special functions :



❑ HYGIENIC CYCLE MENU

A. Strict Temperature Control

In normal operation, the washing machine heating system works with a temperature control hysteresis below the programmed target temperature value. This corresponds with line 1 at the fig.4.3.

Some washing machine operators want a strict temperature control in case of hygienic wash cycles.

Example: this means when 70°C is programmed, the linen must be washed at a temperature that doesn't drop below 70°C. This solution is possible by switching on the „Strict Temperature Control“ function. In this case the wash computer works with a temperature control with a hysteresis above the programmed temperature value. See line 2 at the fig.4.3.

Strict Temperature Control is not applicable for delicates and woollens, and will not work for a programmed temperature < 30°C.

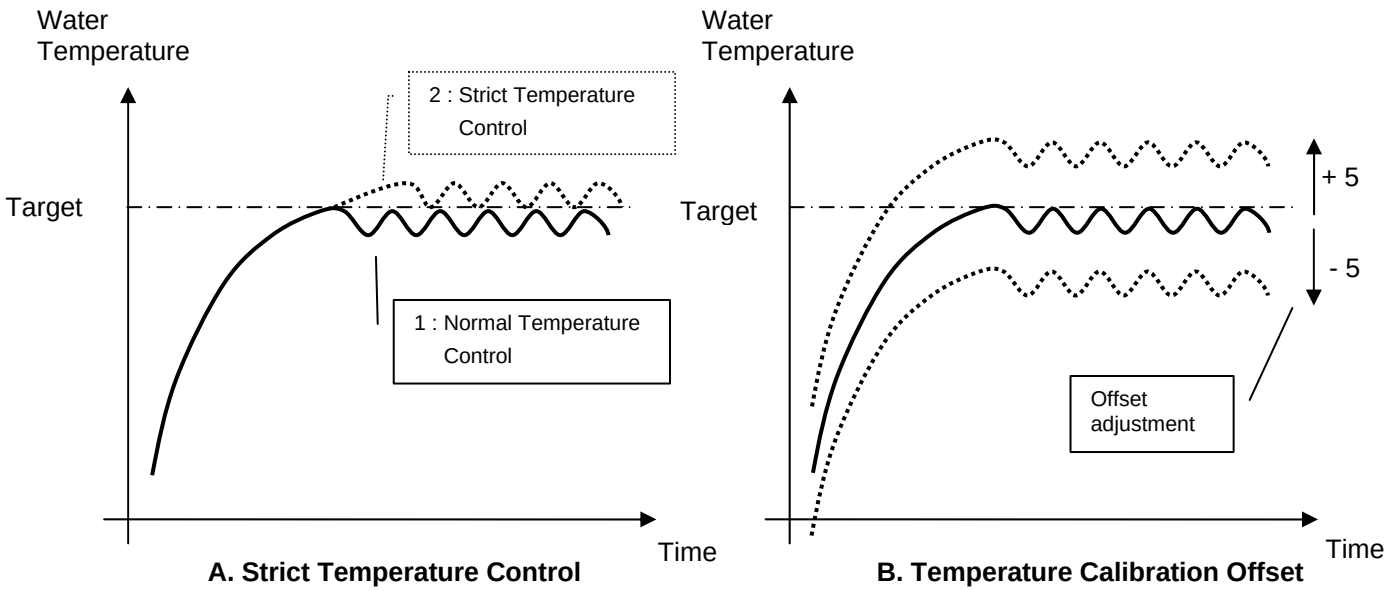


Fig.4.3.

❑ Water Heating graphs.

B. Temperature Calibration Offset

The temperature sensor of the washing machine can be calibrated with an external temperature measurement device as reference. The temperature sensor value can be adjusted in a range of +/- 5°C.

For normal washing machine use such calibration is not required.

Menu Item	Default	Info	Limits
Strict Temp. Control	No	The Strict Temperature Control of the wash computer makes that the fabrics is washed at same value like the programmed target temperature.	No / Yes
Temp. Calib. Offset	0	By changing the Temperature Calibration Offset value the water temperature sensor value is adjusted so that it gets equal with the value of an external reference temperature sensor.	-5 / 0 / 5
Hygienic Water Level	No	This option activates the mode of more accurate checks of the required water level during the washing procedure.	No / Yes
Exit		Return to Advanced Menu.	

❑ PROGRAM MODE LOCK MENU

The access to the Program Mode can be locked by a password.
It means that without password you can't have access to the Main Menu Screen.

Menu Item	Default	Info	Limits
Password	None	Enter a 4 digit value for the Password and press ENTER. ⚠ **Attention!** **The Password will not be requested if it has not been set.**	0000 - 99999
Edit Password ... New Password .... No Password ... Old Password		Insert a 4 digit numeric value to create a new password. Select the menu item „No Password“ if you want to get rid of the Password. To change the Password insert first the old Password, then you are invited to create a new Password.	
Exit		Return to Advanced Menu	

❑ PROGRAM LOCK MENU

Each wash program can be locked individually.
When the program is locked, it means no settings can be changed anymore.
It avoids that programs once created get changed by somebody else.
To get access to this menu a password is needed if it has been set.

Menu Item	Default	Info	Limits
Password	None	Enter a 4 digit value for the Password and press ENTER. ⚠ **Attention!** **The Password will not be requested if it has not been set.**	0000 - 99999
Programs ... 1 HOT INTENS Unlocked 2 WARM INTENS Locked ... 15 HIGH EXTRAC Unlocked EXIT	Unlocked	Each program can be locked – unlocked individually. When the program is locked, it means no Program settings can be changed anymore. It avoids that programs once created get changed by somebody else.	Unlocked / Locked
Edit Password ... New Password .... No Password ... Old Password		Insert a 4 digit numeric value to create a new password. Select the menu item „No Password“ if you want to get rid of the Password. To change the Password insert first the old Password, then you are invited to create a new Password.	
Exit		Return to Advanced Menu	

❑ DATA EXPORT/IMPORT

Menu Item	Default	Info	Limits
Programs Export	No	All wash programs are copied from the control board internal memory onto a USB flash disk. (The USB flash disk must be inserted in the USB connector).	No / Yes
Programs Import	No	All wash programs are copied from USB flash disk into the control board internal memory. (The USB flash disk must be inserted in the USB connector). Wash programs can only be copied into the washer from the same model of washer (e.g. from FX65 machine into another FX65 machine).	No / Yes
Exit		Return to Advanced Menu	

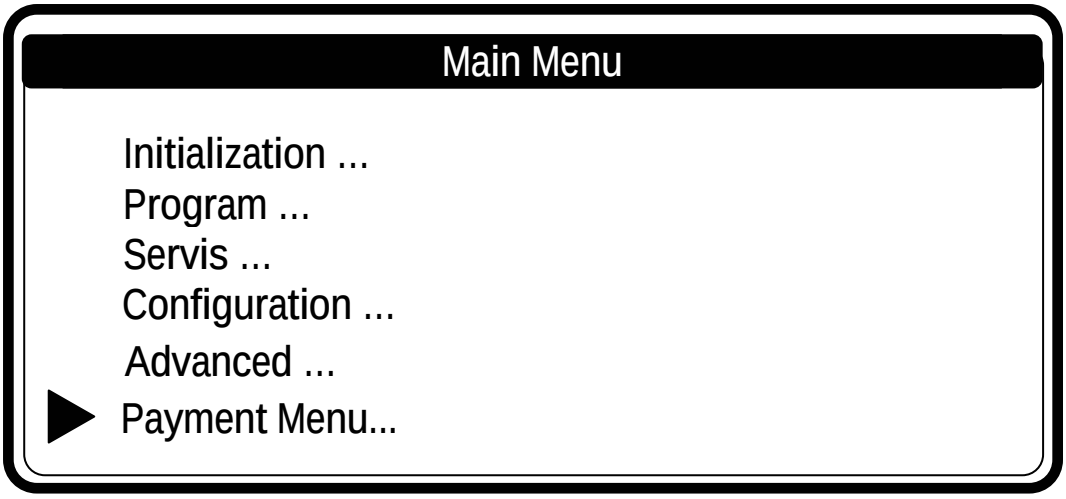
4.4. PAYMENT MENU

The payment menu serves the purpose of setting the payment mode of the machine, values of coins, prices of programs and optional special functions.

❑ HOW TO ENTER THE PAYMENT MENU

You can only enter the Payment Menu when the machine is in the standby state (it is connected to the power supply but no program is running).

The program overview is shown.
Switch the machine into the setup mode (see. chapter 3.4).
The main menu is now available.
In the configuration menu select the Payment Menu.



Menu Item	Default	Info	Limits
Payment mode	No	Selection of payment mode type (see chapter 4.4.1)	No / Coins / External /Comm1 Comm2 / Card ECB
Decimal Point	0	Selection of number of digits behind the decimal point. Only applicable to the Payment mode = Coins	0 / 1 / 2
Coin	1	Selection of the number of coin selectors on a machine. Only applicable to the Payment mode = Coins	1 / 2
Coin 1 Value	100	Coin value of the first coin selector. Only applicable to the Payment mode = Coins	0..999
Coin 1 Currency	€	Currency selection of the first coin selector. Only applicable to the Payment mode = Coins	List of currencies
Coin 2 Value	100	Coin value of the second coin selector. Only applicable to the Payment mode = Coins	0..999

Menu Item	Default	Info	Limits
Coin 2 Currency	€	Currency selection of the second coin selector. Only applicable to the Payment mode = Coins	List of currencies
Prog Prices Price Prog 1 … Price Prog 15 Price Prewash	 100 100 0	Setting the prices of wash programs and prewash Only applicable to the Payment mode = Coins	0..9999
Special Prices Enable Special Price Price Program 1 … Price Program 15 Special Price Prewash	 No 100 100 0	Setting special prices of wash programs and prewash. Special prices are used if they are enabled and a corresponding input of the control board is activated (such as by timer). Only applicable to the Payment mode = Coins	0..9999
Program Blocking Enable Pr1 … Enable Pr15	 Yes Yes	Blocking (disabling) of wash programs.	Yes/No
Optional Functions	No	Selection of additional functions (see chapter 4.4.2)	No Prewash Delicate No extraction Rinsing Extraction
Delayed Start	No	The delayed start function enables to carry out a start delay of a selected wash cycle. The maximum time delay is 24 hours.	Yes/No
Show Start Info	No	Selection whether a prompt to start a program shall be displayed after making the payment. Only for payment mode = Coins and external.	Yes/No

Menu Item	Default	Info	Limits
Show Prog Nr	Number + temperature	The selection of program information display type in the main program menu.	No Number Temperature Number + temperature
Show Prog Time	Yes	Selection whether the time information of selected program should be displayed.	Yes/No
Exit		Return to Main Menu	

4.4.1 SELECTION OF PAYMENT MODE

No : Machine without a payment system (OPL).
Coin : Machine with a coin selector (including electronic - see chapter 11).
External: External payment unit that operates with free contacts (relay).
Comm1 : External payment unit that operates directly through Network Communication.
Comm2 : External payment unit that operates directly through Network Communication.
CRD : Card based central payment system connected to the programmer via free contacts.
ECB : Electronic coin selector equipped with the blocking (disabling) function.

The CRD selection enables to connect a central card payment system to the programmer. It is a special application and a consultation with the manufacturer is necessary.

The ECB selection is designated for connection of blocking (disabling) of the electronic coin selector coil to the programmer of the washing machine. If a wash program is running or if the machine is in a failure state, the coin selector will not accept coins. For connecting the coil to the programmer see the electrical wiring diagram.

4.4.2 SELECTION OF ADDITIONAL FUNCTIONS

One additional function may be selected from the Additional Functions menu. This additional function may be activated (selected) by the washing machine user (customer) during the process of wash program selection.

Available additional functions:

❑ **Prewash:**

- Switches on and off the standard prewash sequence.

❑ **Gentle wash function**

- The Gentle wash function enables the wash cycle with minimum motor output.
  (3“ switched on -12“ switched off)

❑ **No extraction function**

- Economy function – enables to carry out wash cycle without the extraction sequence.

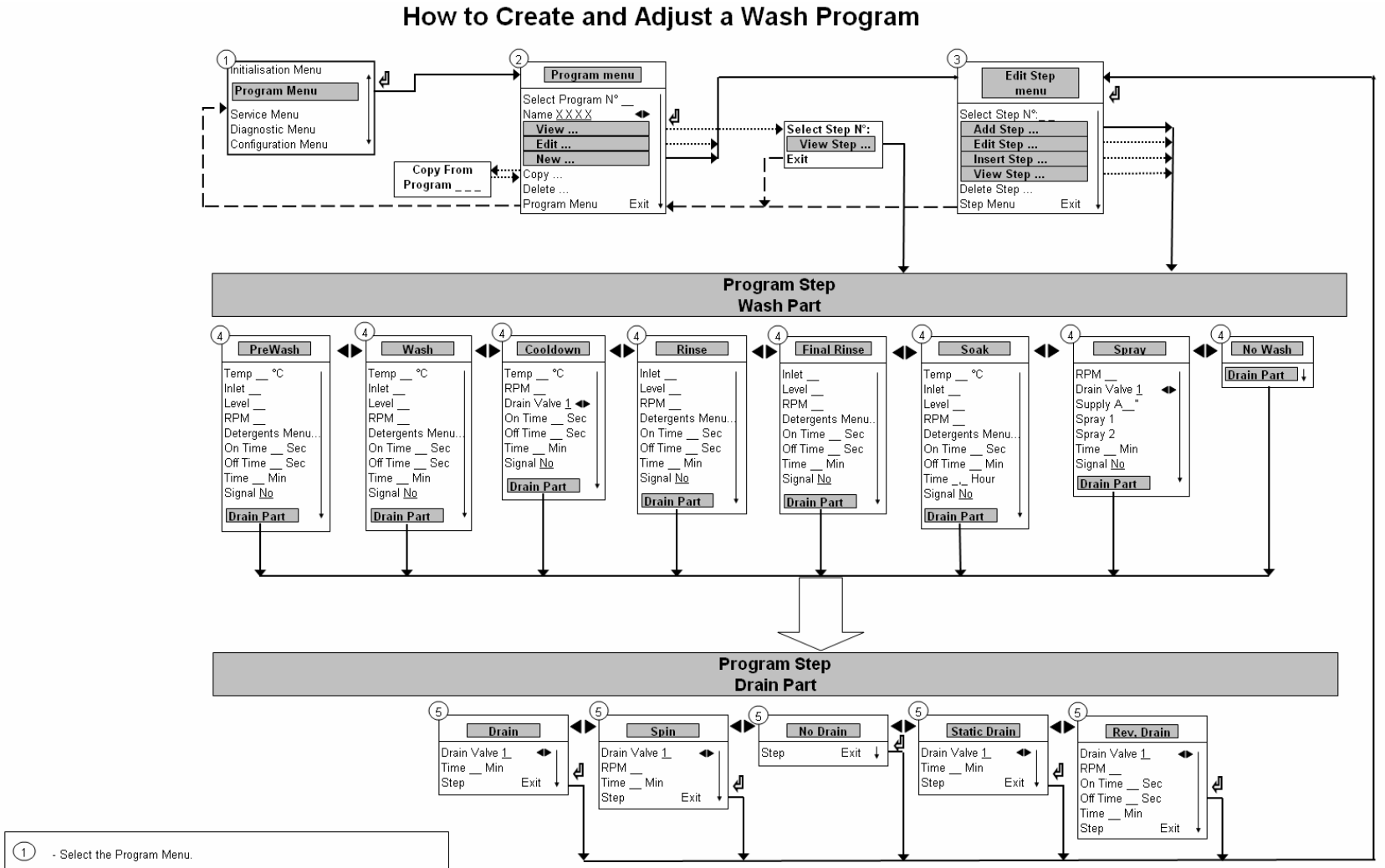
❑ **Rinsing**

- The rinsing sequence is carried out with programs with pre wash.
- The rinse temperature corresponds to the temperature of the prewash, high water level is used.
- Maximum rinsing time is 24 hours.

❑ **Extraction**

- With this function you can select the extraction speed (revolutions of the spinning sequence).

How to Create and Adjust a Wash Program



1 - Select the Program Menu.

2 - Enter the desired Program Number.
- For a new program enter the program name.
- Select Program View, Edit, Insert, New, Copy or Delete.

3 - Select the appropriate Step function Add, Edit, Insert, View or Delete.
- Enter the desired Step Number.

4 - Select the appropriate Wash step function.
- Enter the appropriate Step function settings.

5 - Select the appropriate Drain function.
- Enter the appropriate Step function settings.
- Exit the step menu.

Attention !
Depending the washing machine configuration and initialisation, some menu's and menu-items will not be displayed.

Selecting the menu item : Press button **UP** or **DOWN**.

Selection list : Press button **LEFT** or **RIGH**.

Selecting a new Program Sub-menu and go to this Sub-menu : **ENTER** button

_ _ Insert a value or Select another List element

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5. PROGRAMMING

5.1 GENERAL

Specific functions have been implemented in the wash computer to allow a detailed programming.

❑ **Functions for the complete program.**

- Program Number : Selecting the wash Program.
- Name : Insert or Modify the Name for the Program.
- View : Inspecting the Program settings without making changes.
- Edit : Adjusting a Program.
- New : Creating a New Program.
- Copy : Making a Copy of an existing Program.
- Delete : Erase the Program.
- Exit : Leave the Program Menu.

❑ **Functions for the program steps.**

- Step Number : Selecting the Program Step.
- Add : Adding a Program Step at the end of the program.
- Edit : Adjusting the Program Step.
- Insert : Adding a Program Step between two other steps.
- View : Inspecting the Step settings without making changes.
- Delete : Deleting a Step.
- Exit : Leave the Program Step Menu.

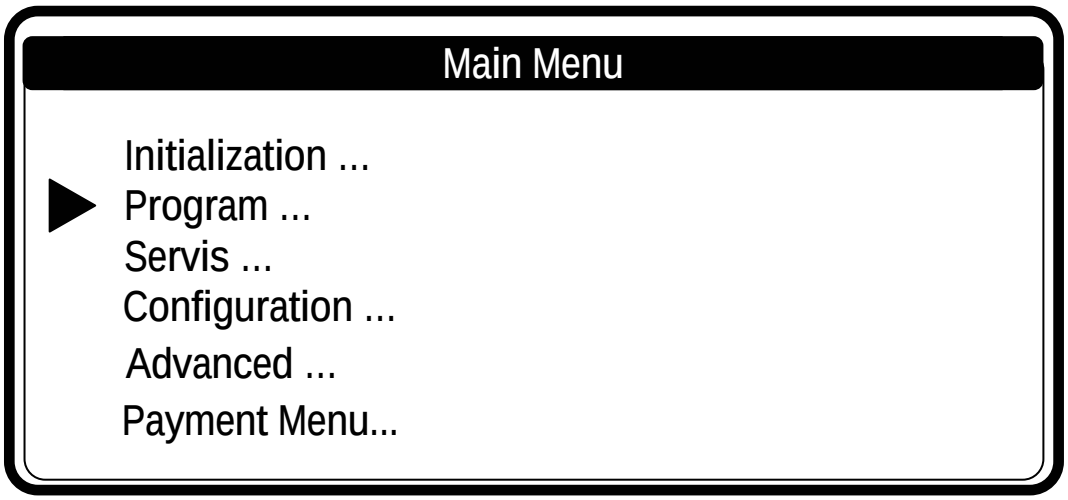
Follow the flowchart step by step.

5.2. STEP ① : PROGRAM MENU

❑ HOW TO GET INTO THE PROGRAM MENU

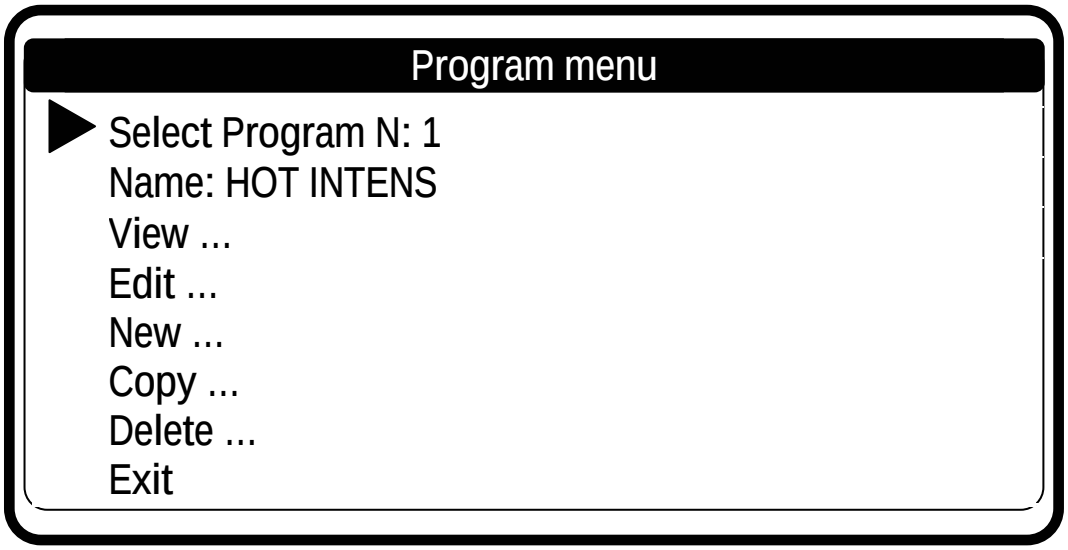
The Program menu can only be accessed when the machine is in standby (the machine is powered up but no program is started).

The program overview is shown.
Switch the machine to the setup mode (see chapter 3.4).
The Main menu is now available.
Press the **ARROW DOWN** button to select the Program Menu.



Press the **ENTER** button to confirm your selection.
Go to ②

5.3. STEP ② : PROGRAM FUNCTIONS

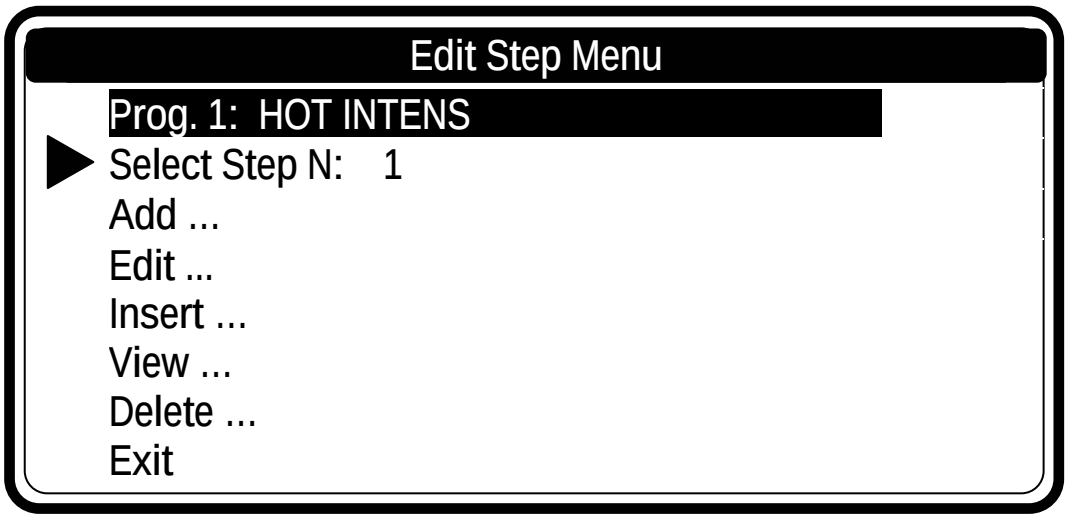


Menu Item	Info
Select Program N°: 1	Use the navigation buttons LEFT and RIGHT to select the program number. Numbers from 1 to 15 can be selected.
Name: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	The Program Name gives info about the type of wash Program. With the ARROW LEFT and RIGHT button you can select the character position. With the ARROW UP and DOWN button you can select the desired character. By pressing the ENTER button, the dashes will disappear.

Menu Item	Info
View	In Program View you can look to the Program Settings, without making any changes.
Edit	Editing a program is changing the program by selecting a new element from a list or by changing values in an existing program. You can also add, insert or delete steps in an existing program.
New	To create a new program, you have to make use of the add step function. By adding steps the program will grow step by step. A confirmation is asked first to delete the old program.
Copy Copy From Program N°: XXX	Sometimes it's easier to make a copy of an existing program and to make some small changes to the copied program. Insert the desired program number from which you want to copy the program. A confirmation is asked first to delete the old program.
Delete a Program	To get rid of an existing program, use the delete program function. The complete program will be erased at once. A confirmation is asked first to delete the old program.
Exit	Return to Main Menu

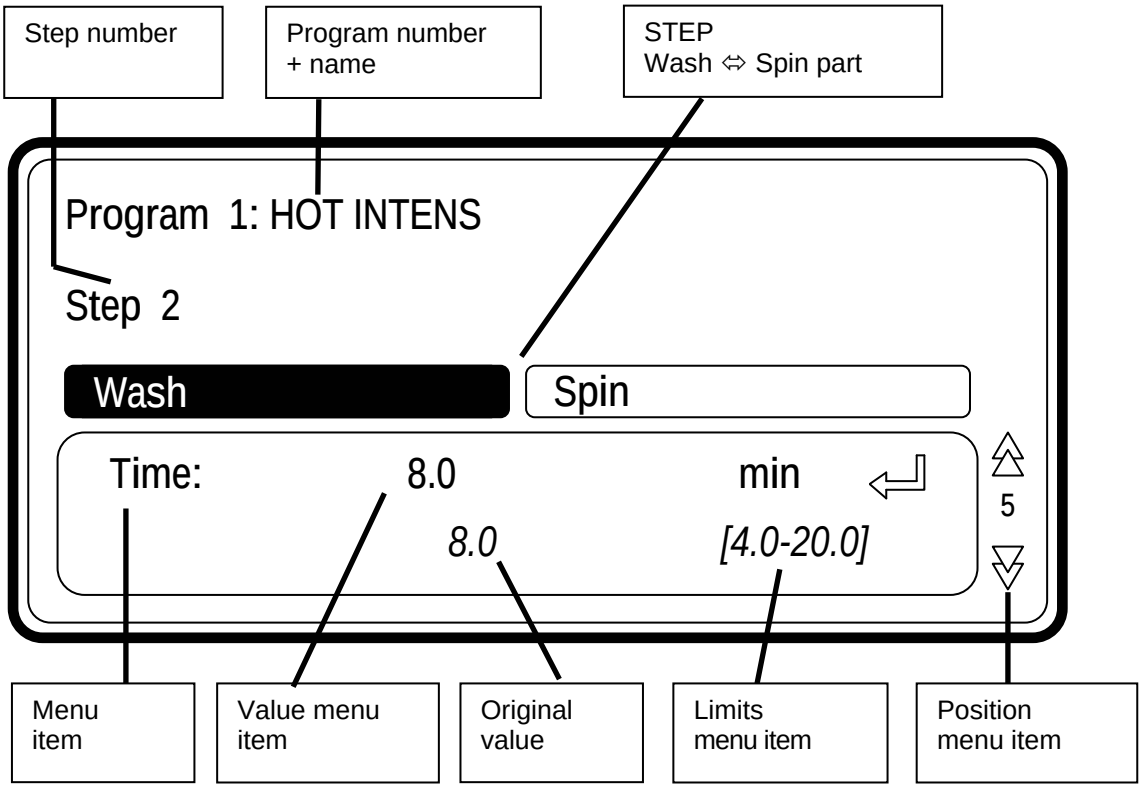
In the Advanced Menu, it is possible to lock - unlock each wash program individually.
If a program is locked, a sign “Locked” is displayed in brackets next to the program number and it is not possible to change the wash programs. Only the View function will be functional and the other functions to adjust the program will be disabled.

5.4. STEP ③ : PROGRAM STEP FUNCTION



Menu Item	Info
Select Step N°: 1	Use the navigation buttons LEFT and RIGHT to select the program number.
Add Step	To create new programs, a new extra step should be added at the end of the program.
Edit Step	To change values and list elements from an existing step.
Insert Step	A new step is inserted in between two existing steps. If the number is not accepted, this means there is no step with a step number = inserted number - 1 available. A new step can only be inserted between two available steps.
View Step	Before making changes in a wash program, it's recommended to have a look at the actual settings by the view function. No changes can be made at the View Step function.
Delete Step	An existing Step in the program disappears when it's deleted. A confirmation is asked first before deleting the Old Step.
Exit	Return to Program Menu

5.5. STEP ④ : PROGRAMMING THE WASH PART

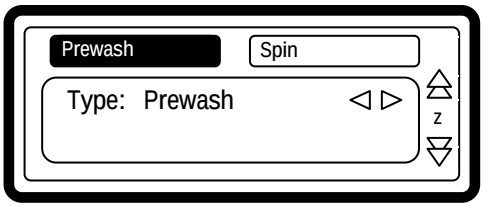


This paragraph gives a detailed explanation about programming the Wash Sequences.

- Each program step contains a wash part and a drain/spin part.
- First the wash part must be selected, item by item can be programmed.
- Next the drain/spin part must be selected, item by item can be programmed. See step ⑤ .
- Without making changes you can watch item by item, by pressing the **ARROW DOWN** or **UP** button.
- If you want to make changes :
  - Insert a new value.
  - Enable or disable a Setting by pressing the **YES** or **NO** button.
  - Select a list element by pressing the **ARROW LEFT** or **RIGHT** button.

  ➔ You always need to confirm by pressing the **ENTER** button.
- Each time you add or insert a new step, default values have been pre-programmed.
  So with less effort, complete programs can be programmed.
  See also chapter 3 for a general explanation concerning the creation of wash programs.
- You can recognize a list element by the LEFT and RIGHT ARROW symbol at the right side on the display.
- The arrow down symbol on the display points to the last Menu Item : EXIT.

❑ SELECTING THE WASH PART



- If you have selected **Add Step**, **Edit Step** or **Insert Step**, you have to select the wash sequence now.
- Depending on the machine type, with top or front soap dispenser, you have more or less sequences available.

Prewash | **Wash** | Cooldown | Rinse | Final Rinse | Soak | Spray | No wash

- For a new step, as a default, the first displayed function is the **Wash** sequence.
- Now by pressing the **ARROW LEFT** or **RIGHT** button, you can select the desired sequence.
- Press the **ENTER** button to confirm.
- You can also use the **ARROW DOWN** button if you accept the pre-programmed default value.

❑ THE PREWASH SEQUENCE

Prewash | Wash | Cooldown | Rinse | Final Rinse | Soak | Spray | No wash

Menu Item	Default	Info	Limits
Temperature	40 °C	The water temperature.	1 - 45 °C
Inlet	I1 - I5 (40°C)	The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention! If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	I1...I8
Level	Normal Low	The suggested water level depends on the machine Type.	See table 3.6.A
RPM	-	The suggested RPM depends on the machineType.	See table 3.6.B
Detergents Menu... Supply 1, ..., 8	0 sec	Time selection for external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Liquid soap supplies must be switched on at the configuration Menu)	0 - 99 sec
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec

Menu Item	Default	Info	Limits
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	4.0 Min	The Prewash Sequence Time. (for 0 Minutes the Prewash sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE WASH SEQUENCE

Prewash | **Wash** | Cooldown | Rinse | Last Rinse | Soak | Spray | No wash

Menu Item	Default	Info	Limits
Temperature	60 °C	The water temperature.	1 - 92 °C
Inlet	I2-I3-I6-I8	The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention!** **If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	I1...I8
Level	Normal Low	The suggested water level depends on the machine Type.	See table 3.6.A
RPM	-	The suggested RPM depends on the machine Type.	See table 3.6.B
Detergents Menu... Supply 1, ..., 8	0 sec	Time selection for Soap Boxes (hopper) and external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Liquid soap supplies must be switched on at the configuration Menu)	0 - 99 sec
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	7.0 Min	The Wash Sequence Time. (for 0 Minutes the Wash sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE COOLDOWN SEQUENCE

Prewash | Wash | **Cooldown** | Rinse | Final Rinse | Soak | Spray | No wash

- After a Hot wash you can program a Cool-down Sequence to avoid temperature shock and shrinking of the garments.
- The drain step after the Hot wash must be put on NO DRAIN.
- No inlets are programmable :
  - machine with three water inlets: inlet 7 is the standard inlet.
  - machine with two water inlets: inlet 1 is the standard inlet.
- The water level can't be programmed as the process of adding and draining water doesn't allow this.

⚠ **ATTENTION!**
DO NOT PROGRAM A DRAIN SEQUENCE BEFORE A COOLDOWN SEQUENCE

Menu Item	Default	Info	Limits
Temperature	60 °C	The water temperature.	1 - 60 °C
RPM	-	The suggested RPM depends on the machine Type.	See table 3.6.B
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	7.0 Min	The programmed time = time needed to decrease the water temperature. Once the programmed temperature has been reached, the next Sequence will be started. (for 0 Minutes the Cooldown sequence will be skipped) (programmable in steps of 0,5 Minutes) ⚠ **Attention!** **If a short time is programmed, the water temperature will decrease fast.** **Recommendation!** **Program 1 minute for each 3°C temperature drop.** **Example :** **For a hot wash of 90°C and a Cooldown Sequence of 60°C a time of about 30°C/3°C = 10 Minutes should be programmed for the Cooldown Sequence.**	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE RINSE SEQUENCE

Prewash | Wash | Cooldown | **Rinse** | Final Rinse | Soak | Spray | No wash

- No temperature can be programmed as a Rinse is only dedicated for cold water.

Menu Item	Default	Info	Limits
Inlet	I1-I2-I7	3 Inlets can be programmed. The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention!** **If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	I1,2,3,4,7
Level	Normal High	The suggested water level depends on the machine Type.	See table 3.6.A
RPM	-	The suggested RPM depends on the machine Type.	See table 3.6.B
Detergents Menu... Supply 1, ..., 8	0 sec	Time selection for Soap Boxes (hopper) and external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Liquid soap supplies must be switched on at the configuration **MENU) .**	0 - 99 sec
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	2.0 Min	The Rinse Sequence Time. (for 0 Minutes the Rinse sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE FINAL RINSE SEQUENCE

Prewash | Wash | Cooldown | Rinse | **Final Rinse** | Soak | Spray | No wash

- No temperature can be programmed as a Last Rinse is only dedicated for cold (hard) water.

Menu Item	Default	Info	Limits
Inlet	I4-I7 (3 inlets) I4 (4 inlets)	3 Inlets can be programmed. The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention!** **If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	I1,2,3,4,7
Level	Normal High	The suggested water level depends on the machine Type.	See table 3.6.A
RPM	-	The suggested RPM depends on the machine Type.	See table 3.6.B
Detergents Menu… Supply 1, …, 8	0 sec	Time selection for external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Liquid soap supplies must be switched on at the configuration Menu)	0 - 99 sec
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	2.0 Min	The Final Rinse Sequence Time. (for 0 Minutes the Final Rinse sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE SOAK SEQUENCE

Prewash | Wash | Cooldown | Rinse | Final Rinse | **Soak** | Spray | No wash

Menu Item	Default	Info	Limits
Temperature	40 °C	The water temperature.	1 - 45 °C
Inlet	I1 - I7	The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention!** **If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	I1...I8
Level	Normal Low	The suggested water level depends on the machine Type.	See table 3.6.A
RPM	-	The suggested RPM depends on the machine Type.	See table 3.6.B
Detergents Menu... Supply 1, ..., 8	0 sec	Time selection for Soap Boxes (hopper) and external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. **(Liquid soap supplies must be switched on at the configuration menu)**	0 - 99 sec
On Time	12 sec	The wash action, motor On Time. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	10 Min	The wash action, motor Off Time. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 minutes
Time	1.0 Hour	The Soak Sequence Time. (for 0 Hour the Soak sequence will be skipped) (programmable in steps of 0,1 Hour)	0 - 25.5 Hour
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE SPRAY SEQUENCE

Prewash | Wash | Cooldown | Rinse | Final Rinse | Soak | **Spray** | No wash

- Water or Liquid is injected at Distribution or Low Spin Speed
- No standard water inlets can be programmed in this function.
- The liquid will be injected based on soap supply programming.

Menu Item	Default	Info	Limits
RPM	-	The suggested RPM depends on the machine Type.	See table 3.6.B
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
Detergents Menu… Supply 1, ..., 8	0 sec	Time selection for Soap Boxes (hopper) and external liquid soap supplies. The Spray sequence only functions with 1 Supply. If you have programmed more then 1 supply an error message will be generated. Put the time of the supplies back to zero until not more than 1 non-zero time value is remaining. If No supply has been programmed: the Spray sequence will be skipped. (Liquid soap supplies must be switched on at the configuration **menu).**	0 - 99 sec
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE NO WASH SEQUENCE

Prewash | Wash | Cooldown | Rinse | Final Rinse | Soak | Spray | **No wash**

- In case of a No Wash Sequence, the wash function of the programmed step is skipped.
  Goto ⑤

5.6. STEP ⑤ : PROGRAMMING THE DRAIN STEP

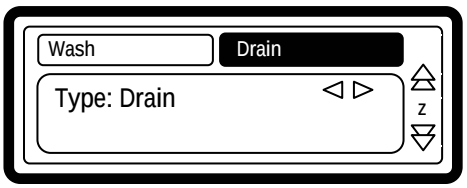
This paragraph gives a detailed explanation about programming the Drain/Extraction Sequences.

After programming the wash step, the drain/extraction step still has to be programmed.

> ⚠ **ATTENTION!**
> **YOU DON'T HAVE TO PROGRAM A DRAIN SEQUENCE BEFORE AN EXTRACTION SEQUENCE AS THE WATER WILL AUTOMATICALLY BE DRAINED AT THE EXTRACTION SEQUENCE**

❑ SELECTING THE DRAIN/EXTRACTION STEP

Depending on the machine type, you have more or less functions.



- For a new step, the first sequence that is displayed is the Drain sequence (default).
- Select the desired Drain step sequence from the list by pressing the **ARROW LEFT** or **RIGHT** button.
- Press the **ENTER** button to confirm your selection.
- You can also use the **ARROW DOWN** button if you accept the pre-programmed default value.

❑ THE DRAIN SEQUENCE

Drain | Extract | No Drain | Static Drain | Reversing Drain

Menu Item	Default	Info	Limits
Drain Valve	1	Only available on washing machines with both: a normal Open and normal Closed Drain valve.	1 - 2
Time	0.5 Min	The Drain Sequence Time. (for 0 Minutes the Drain sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 15.0 Min
Exit		Return to Edit Program Menu.	

❑ THE EXTRACT SEQUENCE

Drain | **Extract** | No Drain | Static Drain | Reversing Drain

Menu Item	Default	Info	Limits
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
RPM	-	The suggested RPM depends on the machine Type.	See table 3.6.B
Time	4.5 Min	The Extract Sequence Time. (for 0 Minutes the Extract sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 15,0 Min
Exit		Return to Edit Program Menu.	

❑ THE NO DRAIN SEQUENCE

Drain | Extract | **No Drain** | Static Drain | Reversing Drain

- The Drain/Extraction part of the programmed step is skipped.

⚠ **Attention!**

For some specific functions „No Drain“ must be programmed.

Example:

If you want to program a Cool-down Sequence, then „No Drain“ must be programmed between the Hot Wash and the Cool-down Sequence.

Menu Item	Default	Info	Limits
Exit		Return to Edit Program Menu.	

❑ THE STATIC DRAIN SEQUENCE

Drain | Extract | No Drain | **Static Drain** | Reversing Drain

The drum is at standstill while the water is drained.

Menu Item	Default	Info	Limits
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
RPM	-	The suggested RPM depends on the machine Type.	See table 3.6.B
Time	0.5 Min	The Static Drain Sequence Time. (for 0 Minutes the Static Drain sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 15,0 Min
Exit		Return to Edit Program Menu.	

⚠ **Attention!**

It's not recommended to program a spin sequence just after a Static Drain Sequence.

At a Static Drain sequence, the garments are not distributed around the drum while the water is drained.

When the spin sequence starts, the garments are a big imbalance and the imbalance (tilt) function will be activated.

❑ THE REVERSING DRAIN SEQUENCE

Drain | Extract | No Drain | Static Drain | **Reversing Drain**

The drum is reversing while the water is drained.

Menu Item	Default	Info	Limits
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
RPM	-	The suggested RPM depends on the machine Type.	See table 3.6.B
On Time	12 sec	The mechanical action, motor On Time. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The mechanical action, motor Off Time. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	0.5 Min	The Static Drain Sequence Time. (for 0 Minutes the Static Drain sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 15,0 Min
Exit		Return to Edit Program Menu.	

6. OPERATION MENU

6.1. STARTING UP

⚠ **ATTENTION!**

BEFORE STARTING UP THE FIRST TIME, BE SURE THAT THE MACHINE IS WELL INSTALLED. SEE INSTALLATION MANUAL.

MAKE SURE THAT THE CONFIGURATION AND INITIALIZATION MENU HAVE THE RIGHT SETTINGS. SEE CHAPTER 4.

6.2. SWITCHING ON THE POWER

☞ The display lights up when you switch on the power.

- If the machine is ready to be started, the program overview is shown.

6.3. LOAD THE WASHING MACHINE

☞ Open the door and load the laundry into the drum. When the drum is loaded, close the door.

6.4. PUT SOAP INTO THE SOAP DISPENSER

☞ Put the correct amount of soap into the soap dispenser.

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- At the wash sequence, it depends of the pre-programmed water inlets in which the soap dispenser you have to add soap

➔ See paragraph 3.5. for more information

6.5. STARTING A WASH PROGRAM

☞ Use the navigation buttons UP and DOWN and choose the required program.

☞ Press the CONFIRM SELECTION button. If any of the special functions is activated, the screen for activation of the selected function is shown. Use the ADDITIONAL FUNCTION SELECTION button and carry out the setting. End the process of selecting function by using the CONFIRM SELECTION button.

☞ The display shows information on the program, soap dosage and price (for machines with a coin selector).

☞ Start the program by pressing the START button. If it is a machine with coin selector, make the payment first.

☞ **NOTE:**

APPLICABLE TO MACHINES WITH A COIN SELECTOR: SELECTION OF A NEW PROGRAM WHEN THE MACHINE IS READY TO START OPERATION

If the newly selected program is more expensive:
- the price difference is shown on the display
- it is now necessary to insert more coins so that the price difference between the old and new program is settled

6.6. SELECTION OF A NEW PROGRAM AFTER THE ORIGINAL PROGRAM HAS STARTED

☞ It sometimes happens that you press the “START” button before you select the correct program number. This is not a problem. You can still select a different program number.

☞ Use the navigation buttons UP and DOWN to choose the required program.

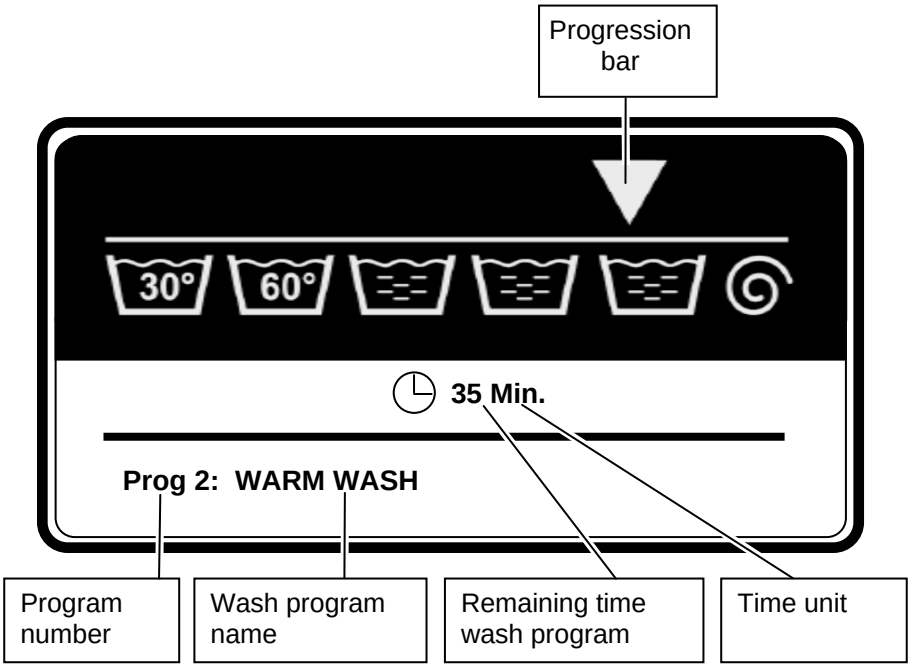
☞ **NOTE:**
THE TIME FOR SELECTING NEW PROGRAM IS LIMITED.

- **OPL version**: switching over to a different program can only be done within the first step.
- **Coin operated machines**: the program selection change can be done within the first 150 s.

The program might require the insertion of more coins. If you do not insert the required coins, the program returns to the program number which was selected when the START button was pressed.

6.7. THE ACTIVE PROGRAM

- The cycle time will decrease minute by minute and gives you an indication how long it will take before the cycle is finished.
- A Progression bar shows the progression of the wash cycle and the active wash step.



6.8. ADVANCING A WASH PROGRAM

☞ If the Advancing a wash program function is enabled (item Allow Advance in the Initialization menu): should you desire to skip a particular step, press the **START** button.

☞ If the Advancing a wash program function is disabled:
it is possible to skip a wash program step after having switched into the SERVICE INFO, (see chapter.3.4.)

6.9. WASH TIME

- Once the program has been started, the remaining cycle time is displayed.
- The clock symbol indicates whether the time of the running cycle is being counted down or not. If the clock symbol is not flashing, it means that the cycle time is not being counted down.
- The time for which the symbol is not flashing is the extra time.
- The total wash time = programmed time (1) + the extra time (2+3+4+5)
    1. The programmed time of the processes.
    2. The extra time for taking water.
    3. The extra time for draining (if the water is not drained in 30 sec and the extended drain time is started)
    4. The extra time for heating if „Wait for temperature“ is selected.
    5. The extra free run time at the end of the spin sequence.
- The display of remaining cycle time can be disabled in Payment menu – item “Show Prog Time.”

6.10. PROGRAM END

- The time on the display counts down until 0.
- At the end of the cycle, the door lock is released, the display shows the **UNLOAD** message and it is possible to open the door (unload the laundry).

☞ Open the door and unload the machine.

- The Message **UNLOAD** will be erased and the machine is ready to start a new program.

The program overview is shown.

6.11. WATER FILL PROCESS

- Depending on the water temperature the cold and hot inlet valves will be opened.
- The water level is measured by an electronic water level sensor.
- If the Temperature Balance function is enabled, the Wash Computer will control the water temperature until the target temperature is reached. For Hot wash programs, extra heating will be required after the fill process to reach the programmed hot water temperature.
- In the standard wash tables you will find a Normal Low and Normal High water level.
- These are the standard water levels :
  - The Normal Low water level is used for the Prewash, Wash and Soak sequence.
  - The Normal High water level is used for the Rinse and Final Rinse sequence.

- The water level can only be programmed between two limits:
  - The lower limit is above the heating elements and the temperature sensor.
  - The upper limit is in the middle of the wash drum.

6.12. HEATING PROCESS

- When „No Wait for Temperature“ (No Wait for Heat) is selected:
  - The machine will heat until the time of the specific wash step is over or if the programmed temperature was reached.
  - Even if the programmed temperature is not reached, the program will start the next sequence if the time of the sequence is over.
- When „Wait for Temperature“ (Wait for Heat) is selected:

- The machine will heat until the programmed temperature is reached.
  The programmed time of the wash sequence will only start counting down from the moment that the target temperature was reached.

⚠ **ATTENTION!**
WHEN THE MACHINES DO NOT HAVE ELECTRICAL OR STEAM HEATING NO „WAIT FOR TEMPERATURE“ SHOULD BE SELECTED IN THE INITIALIZATION MENU.

6.13. COOLDOWN FUNCTION

- AUTOMATIC COOLDOWN : this function avoids thermal shock in the washing machine.
  ➔ For Hot washes above 65°C, Cold water is added at the end of the step.
- PROGRAMMED COOLDOWN : this function is recommended to avoid the shrinking of the garments.
  ➔ Water is drained and cold water is added bit by bit. The temperature of the water in the tub will decrease slowly as a function of the programmed Cool-down Sequence (temperature and time).

6.14. SPRAY FUNCTION

- The special product is injected while the drain valve is open and depending the programmed speed, the drum will spin at distribution or low spin speed.

6.15. UNBALANCE

- When the machine is badly loaded during the spin sequence, then the tilt switch will get activated.
- The spin sequence will be interrupted and the garments in the drum will be redistributed.
- The washing machine will try up to 5 times to redistribute the garments.

6.16. PAUSE

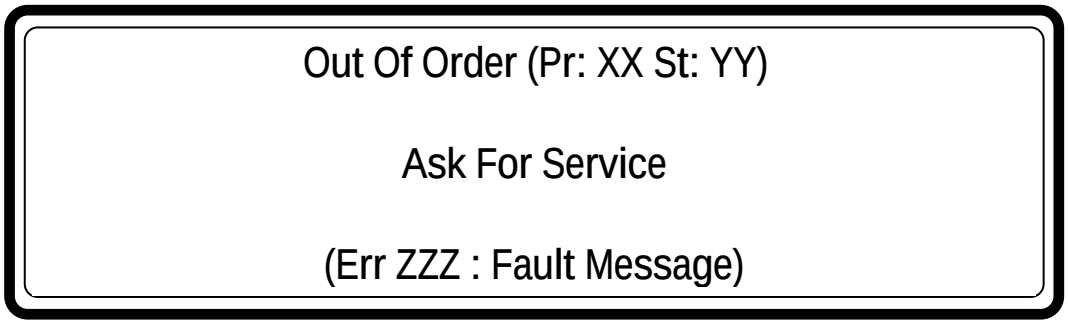
- When a signal has been programmed, at the end of a wash sequence, the machine will stop the Program and the message „**Pause, Press Start to Continue“** will be displayed.
- The buzzer will give a warning for the operator.
- Now the operator can add Soap.
- By pressing the **START** button the PROGRAM will go on with the next Program step.

6.17. WAIT STATE

- It can occur that the normal machine operation has been interrupted and that you have to wait until the Wash Computer allows you to go on.
- You can recognize the wait state by a display that shows **WAIT** and a decreasing counter.
- This will occur when the power has been switched off and on at a running wash cycle.
- As the software doesn‘t know how fast the motor was spinning, a delay time is respected before the machine can be restarted.

6.18. HOW TO HANDLE FAILURE MESSAGES

- When a failure has been detected by the Wash Computer, a failure message is generated to inform the operator about the problem.



XX : The Program number
YY : The Step number
Err ZZZ : The error number
Fault Message : The name of the error message

- At the upper line, the program number and step number of the interrupted program are displayed.
- The message **UNLOAD!** will inform you if it‘s allowed to open the door.

❑ **Safety conditions**

- If there is still water in the drum or if the temperature is too high, it‘s not possible to open the door.
- The messages „**WATER IN CAGE**“ or „**TOO HOT** “ will be displayed together with the level and the temperature.

⚠ **ATTENTION!**
IT’S UP TO THE OPERATOR TO TAKE THE NECESSARY PRECAUTIONS IF THE DRAIN VALVE IS NOT FUNCTIONAL AND THERE IS STILL HOT WATER IN THE TUB AT THE END OF THE WASH CYCLE.
ON THE DISPLAY THE ACTUAL WATER TEMPERATURE AND LEVEL WILL BE DISPLAYED.
WAIT UNTIL THE WATER IS DRAINED AND UNTIL THE WATER HAS COOLED BEFORE ALL INTERVENTIONS AS HOT WATER CAN CAUSE BURNS.

- If something goes wrong with the door lock, the program will be finished immediately.
- For safety purposes, the door will stay locked.

⚠ **ATTENTION!**
GO TO THE CHAPTER 8 TROUBLE SHOOTING TO FIND OUT MORE ABOUT ERROR HANDLING.

6.19. HOW TO HANDLE POWER INTERRUPTIONS

See Installation, maintenance and user's manual.

6.20. THE INFO AND SERVICE INFO BUTTONS

6.20.1. THE INFO BUTTON

OPL machines:

☞ If you want the information on the selected program to be displayed, press the **INFO** button.

- A detailed overview of program steps is shown.
- At each steps, all its details are shown.
- You can leave the Info menu by pressing the INFO button again.

Machines with coin selectors:

☞ After pressing the **INFO** button, the navigation information for machine operation is shown.

6.20.2. SERVICE INFO

☞ If you want to find out current water temperature, water level and other service information, you can move into the SERVICE INFO, (see chapter 3.4).

- At the Service info you can inspect:
  - the water temperature and water level
  - the number of cycles that have been accumulated (service due)
  - the actual wash machine states at the running wash cycle
- By pressing the **ARROW DOWN** button you will see all the menu items.

6.20.3. PROGRAM OR COIN SELECTOR COUNTER

☞ Move to the SERVICE INFO, (see chapter 3.4.).

☞ Press the navigation arrow DOWN to move into the screen with counters.

- **OPL version**: the program counter is shown.
- **Coin operated machines**: the coin selector counter is shown.

☞ Resetting the counters to zero:

- the service cycle counter can be reset to zero in the Service Menu / Tools / Resetting the cycle counter.
- to reset the coin selector counter, press the hidden navigation button RIGHT three times.

6.21. EXTERNAL LIQUID SOAP BOXES

- If the washing machine is connected with external soap pumps, a signal from the soap supply reservoir can be connected to the washing machine computer.
- If the Soap box is almost empty, then the diagnostic message „Err 39 out of soap“ will be shown on the display of the Wash Computer.
- So the operator does not have to check the soap supply reservoirs continuously to avoid washing without soap.

7. PRE-PROGRAMMED PROGRAMS

The Wash Computer contains 15 pre-programmed Standard Wash Programs.

> ⚠ **ATTENTION!**
> **THE PRE-PROGRAMMED PROCESSES ARE GIVEN AS AN EXAMPLE ONLY.**
> **FOR THE CREATION OF YOUR OWN WASH PROGRAMS, CONTACT YOUR SOAP SUPPLIER.**

7.1. LEGEND

❑ WATER INLETS (VALVES)

- Inlet Valve **1**:	Cold Soft Water	Soap Dispenser Compartment „I“	Pre wash
- Inlet Valve **2**:	Cold Soft Water	Soap Dispenser Compartment „II“	Wash - detergent
- Inlet Valve **3**:	Cold Soft Water	Soap Dispenser Compartment „III“	Wash - liquid
- Inlet Valve **4**:	Cold Hard Water	Soap Dispenser Compartment „Fabric softener“	Last rinse
- Inlet Valve **5**:	Hot Soft Water	Soap Dispenser Compartment „I“	Pre wash
- Inlet Valve **6**:	Hot Soft Water	Soap Dispenser Compartment „II“	Wash - detergent
- Inlet Valve **7**:	Cold Hard Water	Direct Inlet	(External liquid soap)
- Inlet Valve **8**:	Hot Soft Water	Soap Dispenser Compartment „III“	Wash - liquid

❑ WATER LEVEL

- **NL**: **N**ormal **L**ow level
- **NH**: **N**ormal **H**igh level
- **EL**: **E**conomic **L**ow level
- **EH**: **E**conomic **H**igh level

❑ WASH ACTION

- Normal Wash Action
  - **A** = **12“** 12 Seconds Action
  - **R** = **3**“ 3 Seconds Rest

- Gentle Wash Action
  - **A** = **3“** 3 Seconds Action
  - **R** = **12“** 12 Seconds Rest

❑ RPM (REVOLUTIONS PER MINUTE)

- **W:** Washing Speed (≈ 32 - 50 RPM)
- **D:** Distribution Speed (not changeable) (≈ 100 RPM)
- **L:** Low extraction speed, standard (≈ 400 RPM)
- **H:** High extraction speed (≈ 625 - 1165 RPM) (depending on the machine capacity)

7.2. WASH PROGRAMS

❑ WASH PROGRAM 1: HOT WASH INTENSIVE - 90°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5	30°C	NH	5 min	W (normal)	1=30“
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3-6-8	90°C	NH	10 min	W (normal	2=30“
	Drain	-	-	-	30 s	D	
Step 3	Rinse 1	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	4-7	-	NL	4 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 2: WARM WASH INTENSIVE - 60°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5	30°C	NH	5 min	W (normal)	1=30“
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3-6-8	60°C	NH	10 min	W (normal)	2=30“
	Drain	-	-	-	30 s	D	
Step 3	Rinse 1	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	4-7	-	NL	4 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 3: COLORED WASH INTENSIVE - 40°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5	30°C	NH	5 min	W (normal)	1=30“
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3-6-8	40°C	NH	10 min	W (normal)	2=30“
	Drain	-	-	-	30 s	D	
Step 3	Rinse 1	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	4-7	-	NL	4 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 4: BRIGHT WASH INTENSIVE - 30°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	30°C	NH	10 min	W (normal)	2=30“
	Drain	-	-	-	30 sec	D	
Step 2	Rinse 1	1-2-7	-	NH	4 min	W (normal)	-
	Drain	-	-	-	1 min	D	-
Step 3	Rinse 2	1-2-7	-	NH	4 min	W (normal)	-
	Drain	-	-	-	1 min	D	-
Step 4	Rinse 3	4-7	-	NL	4 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 sec	W (5s / 5s)	-

❑ WASH PROGRAM 5: WOOLENS - 15°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3	15°C	NH	6 min	W (gentle)	2=30“
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	NH	2 min	W (gentle)	-
	Drain	-	-	-	30 sec	D	-
Step 3	Rinse 2	1-2-7	-	NH	2 min	W (gentle)	-
	Drain	-	-	-	30 s	D	-
Step 4	Rinse 3	4-7	-	NH	3 min	W (gentle)	3=30“
	Final spin/Spin	-	-	-	2,5 min	L	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (gentle)	-

❑ WASH PROGRAM 6: HOT WASH - 90°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	90°C	NL (1)	20 min	W (normal)	2=30“
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 2	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 3	4-7	-	EH	6 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

(1) EH – FX135, RX135

❑ WASH PROGRAM 7: WARM WASH - 60°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	60°C	NL (1)	20 min	W (normal)	2=30“
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 2	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 3	4-7	-	EH	6 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

(1) EH – FX135, RX135

❑ WASH PROGRAM 8: COLORED WASH - 40°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	40°C	NL (1)	20 min	W (normal)	2=30“
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 2	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 3	4-7	-	EH	6 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

(1) EH – FX135, RX135

❑ WASH PROGRAM 9: BRIGHT WASH - 30°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	30°C	NL (1)	20 min	W (normal)	2=30“
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	EH	4 min	W (normal)	-
	Drain	-	-	-	1 min	D	-
Step 3	Rinse 2	1-2-7	-	EH	4 min	W (normal)	-
	Drain	-	-	-	1 min	D	-
Step 4	Rinse 3	4-7	-	EH	6 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

(1) EH – FX135, RX135

❑ WASH PROGRAM 10: ECO HOT WASH - 90°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	85°C	EH (1)	14 min	W (normal)	2=30“
	Drain	-	-	-	1 min	L	
Step 2	Rinse 1	1-2-7	-	EL (2)	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 3	4-7	-	EL (3)	4 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

(1) EL – FX65, FX135, RX65, RX135

(2) EH – FX65, RX65

(2) NL – FX135, RX135

(3) EH – FX65, FX105, FX135, RX65, RX105, RX135

❑ WASH PROGRAM 11: ECO WARM WASH - 60°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	60°C	EH (1)	14 min	W (normal)	2=30“
	Drain	-	-	-	1 min	L	
Step 2	Rinse 1	1-2-7	-	EL (2)	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 3	4-7	-	EL (3)	4 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

(1) EL – FX65, FX135, RX65, RX135
(2) EH – FX65, RX65
(2) NL – FX135, RX135
(3) EH – FX65, FX105, FX135, RX65, RX105, RX135

❑ WASH PROGRAM 12: ECO COLOR WASH - 40°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	40°C	EH (1)	14 min	W (normal)	2=30“
	Drain	-	-	-	1 min	L	
Step 2	Rinse 1	1-2-7	-	EL (2)	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 3	4-7	-	EL (3)	4 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

(1) EL – FX65, FX135, RX65, RX135
(2) EH – FX65, RX65
(2) NL – FX135, RX135
(3) EH – FX65, FX105, FX135, RX65, RX105, RX135

❑ WASH PROGRAM 13: ECO BRIGHT WASH - 30°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	30°C	EH (1)	14 min	W (normal)	2=30“
	Drain	-	-	-	1 min	D	
Step 2	Rinse 1	1-2-7	-	EL (2)	4 min	W (normal)	-
	Spin	-	-	-	1 min	D	-
Step 3	Rinse 3	4-7	-	EL (3)	4 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

(1) EL – FX65, FX135, RX65, RX135
(2) EH – FX65, RX65
(2) NL – FX135, RX135
(3) EH – FX65, FX105, FX135, RX65, RX105, RX135

❑ WASH PROGRAM 14: EXTRACTION - LOW SPEED

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Rinse	4-7	-	NH	3 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	5,5 min	L	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (normal)	-

❑ WASH PROGRAM 15: EXTRACTION - HIGH SPEED

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Rinse	4-7	-	NH	3 min	W (normal)	3=30“
	Final spin/Spin	-	-	-	15 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (normal)	-

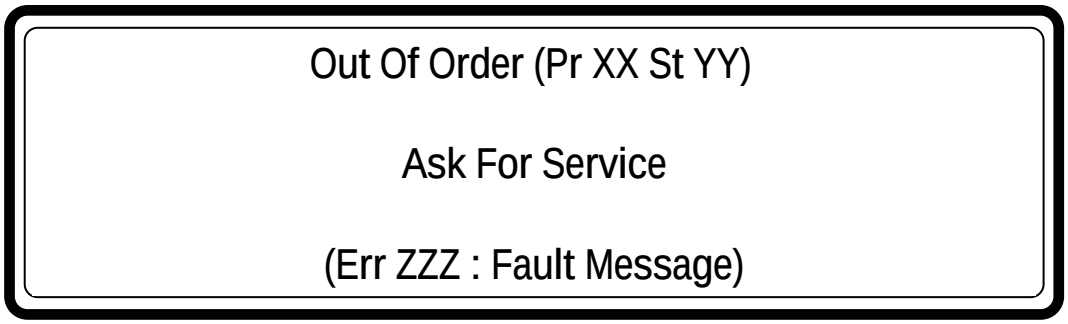
8. TROUBLESHOOTING

8.1. DISPLAY MESSAGES

- Various messages may appear on the display at the start, during or at the end of a washing cycle.
- In some specific cases, an acoustic signal will alert the operator.
- When an error occurs the machine will automatically go over to a safe state. With the diagnostic program you can determine the problem. This program will test the individual functions of the washing machine one by one.

8.2. FAULT MESSAGES

- If a failure occurs the computer will display a diagnostic error message.
- The program number and step at which the interruption has occurred are displayed.
- The fault message itself contains a number and a corresponding text label by which it's easy to find the related information in the manual.
- If **UNLOAD** is displayed, the door can be opened.



XX	: the program number
YY	: the program step number
Err ZZZ	: the number of the occurred error
Fault Message	: the text label of the error message

8.3. HOW TO HANDLE FAULT MESSAGES

⚠ ATTENTION!
CHECK IN THE MANUAL TO SEE WHAT PROBLEM THE ERROR MESSAGE CORRESPONDS WITH.
ASK THE ASSISTANCE OF AN EXPERIENCED TECHNICIAN TO SOLVE THE PROBLEM.
ALL THE SAFETY PRECAUTIONS MUST BE FOLLOWED BEFORE EACH INTERVENTION.

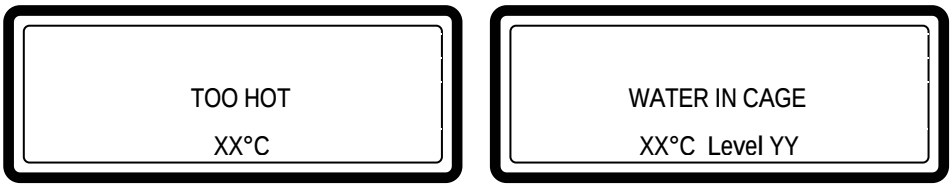
- You can overrule and erase fault messages by:
  - ☞ pressing the **INFO** button
  - ☞ pressing the **STOP** or **ENTER** button

☞ switching the power off/on

☞ opening the door (fault 4 and 41)

- For safety reasons the door will not be unlocked if :
  - there is still water in the drum
  - the water temperature is above 55°C
  - the drum is still turning (a safety time will be respected until the drum comes to a standstill)
  - there is a problem with the door lock system

- Each time at the end of the cycle, the Wash computer will fulfill a safety test sequence.
- If at the end of the cycle the safety conditions are not fulfilled, the messages **TOO HOT** or **WATER IN CAGE** will be displayed.



- If the problem disappears (the water has dropped below the safety level for spin or the water temperature has dropped below 55°C) the Error message **TOO HOT** or **WATER IN CAGE** will disappear automatically.

⚠ ATTENTION!
IT'S UP TO THE OPERATOR TO TAKE THE NECESSARY PRECAUTIONS IF THE DRAIN VALVE IS NOT FUNCTIONAL AND IF THERE IS STILL HOT WATER IN THE TUB AT THE END OF THE WASH CYCLE.
ON THE DISPLAY THE ACTUAL WATER TEMPERATURE AND LEVEL WILL BE DISPLAYED.
WAIT UNTIL THE WATER IS DRAINED AND UNTIL THE WATER HAS COOLED BEFORE ALL INTERVENTIONS AS HOT WATER CAN CAUSE SEVERE BURNS.
CARE MUST BE TAKEN THAT NOBODY GETS BURNED DUE TO HOT WATER.

⚠ **ATTENTION!**
THE ERROR MESSAGE TOO HOT CAN ALSO APPEAR AT THE END OF A CYCLE EVEN IF NO FAILURE HAS OCCURED
AS AN EXAMPLE, SUPPOSE A WASH PROGRAM WITH A HOT WASH.
AFTER THIS HOT WASH SEQUENCE, NO SEQUENCE WITH A LOW WATER TEMPERATURE HAS BEEN PROGRAMMED.
AT THE END OF SUCH A WASH CYCLE, THE TEMPERATURE IN THE TUB WILL STAY HIGH EVEN IF THERE IS NO WATER IN THE TUB.
AS A RESULT THE WASH COMPUTER WILL DECIDE THAT IT'S NOT SAFE TO OPEN THE DOOR AS THE MEASURED TEMPERATURE INSIDE THE TUB IS TOO HIGH.
WITHOUT INSERTING COLD WATER INSIDE THE TUB, IT CAN TAKE A LONG TIME BEFORE THE TEMPERATURE DROPS TO AN ACCEPTABLE SAFE LEVEL.
ONCE THE TEMPERATURE IN THE DRUM HAS DROPPED SUFFICIENTLY, THE FAILURE MESSAGE WILL DISAPPEAR AND THE DOOR WILL BE UNLOCKED AUTOMATICALLY.

DEPENDING ON THE FAILURE TYPE THE COMPUTER WILL START A SPECIFIC PROCEDURE:

❑ **WHEN SAFETY IS INVOLVED**

- Full stop + tumble : the program is stopped but will run the tumble sequence
- Full stop + safety time : the program is stopped and a safety time is started
- Don't start : the program will not be started as long as the safety conditions are not fulfilled

❑ **WHEN SAFETY IS NOT INVOLVED**

- Full stop + request for continue : a request to **Continue ?** the program is displayed
- Skip + continue : the actual cycle step is skipped and the program continues with the next step
- Continue : the program continues

SPECIAL CASES :

- For **E11: Fill Time failure** and **E14: Heating time failure** after overruling and erasing the failure message, you can restart or stop the sequence, as **Continue ?** will be displayed.
  Possible cause : - water supply inlets closed
  - decreasing capacity of the heating elements

- For **E24: Defective Level sensor**, **E25: Defective Temperature sensor and E35:Wrong software version** the Failure message can **only** be erased by switching the power off and back on.

- Fault **31: Initialization fault inverter** and **32: Verification fault inverter** can be erased by switching off the power. But as Fault 31 and 32 indicates that the frequency inverter is not loaded with the correct parameter settings, the washing machine can be damaged when the inverter is functioning with the wrong settings.
  Do not use the washing machine before a technician has inspected the problem.

- Fault **41: Service Due** will occur over and over again until you have reset the cycle counter.
  See Paragraph 8.5 how to reset the cycle counter.

8.4. OVERVIEW

N°	Failure message	Failure	Action	Fault occurrence
E2	No Drain	Drain failure	Full Stop + tumble	Draining sequence
E3	Tilt Fault	Out of balance	Full stop + tumble	Whole cycle
E4	Imbalance	Out of balance : Normal spin	Skip + continue	After 5 x tilt
E5	Tilt High Sp	Out of balance : high spin	Full stop + safety time	>500 or 750 RPM
E6	Door Switch	Door switch failure	Full stop + safety time	Whole cycle
E7	Door Coil	Door lock switch failure	Full stop + safety time	Whole cycle
E8	Door Start	Door lock check at start failure	Don't start	At start up
E9	Door Unload	Door lock switch closed failure	Don't start	End cycle
E11	No Fill	Fill failure	Full stop + request for Continue	While filling
E12	Overfill	Overfill failure	Full stop + tumble	While filling
E13	No Heating	Heating failure	Full stop + tumble	While heating
E14	Heat Time	Heating time failure	Full stop + request for Continue	While heating
E15	Too Hot	Too Hot	Full stop + tumble	While heating
E16	Coin blocking 1	Coin meter failure	/	Before start up
E17	Coin blocking 2	Coin meter failure	/	Before start up
E21	Overflow	Overflow failure	Full stop + tumble	Wash step
E24	Level Sens	Defective level sensor	Continue + Don't start	Before start up
E25	Temp Sensor	Defective temperature sensor	Continue + Don't start	Before start up
E26	Mitsub code	Undefined frequency inverter error code	Full stop + tumble	Whole cycle
E27	Comm fault	Communication fault inverter	Full stop + safety time	Whole cycle
E28	THT time / E.OL	THT Time out / E.OL	Full stop + safety time	At spin sequence
E29	OV3 time / E.OP	OV3 Time out / E.OP	Full stop + safety time	At spin sequence
E31	Load Parr	Initialization fault inverter	Don't start	At initialization
E32	Verify Parr	Verification fault inverter	Don't start	At loading parameters
E35	Wrong Softw	Wrong software version	Don't start	New software version
E37	No Drain Sp	Drain failure at the Spray Sequence	Full stop + tumble	Spray Sequence
E39	Out of Soap	The Soap Supplies are running Out of Soap	For Info only	Wash step
E41	Service Due	Service Due Warning	For Info only Open door = reset	End cycle
E42	Connection	No Network Connection	For Info only	Data Transfer Networking
E43	Voltage Par	Wrong Voltage Range Selection	Make correct selection	Configuration menu

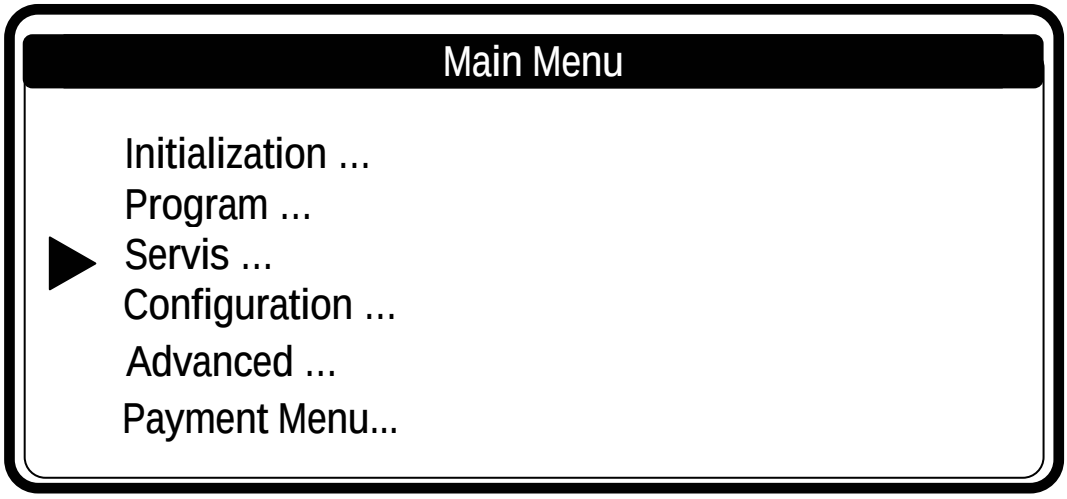
N°	Failure message	Failure	Action	Fault occurrence
E44	Model Type	Incorrect selection of machine type	Make correct selection	Configuration menu
E80	Time Out Input16	On Hold Signal Failure Soap Dispensing System	Full stop + tumble.	Whole cycle
E300-E353	Mits Err	Specific Mitsubishi Inverter Alarm	Full stop + safety time	Whole cycle
E500-E525	Memory Err	Memory Error	Full stop + safety time	Any time
E560-E563	USB Errors	Errors in communication with USB flash disk	For Info only	Only in Advanced menu Data Export/Import
E600-E628	Softw Err	Software Error	Full stop + safety time	Any time

8.5. SERVICE MENU

In the Service menu you have some extra utilities:

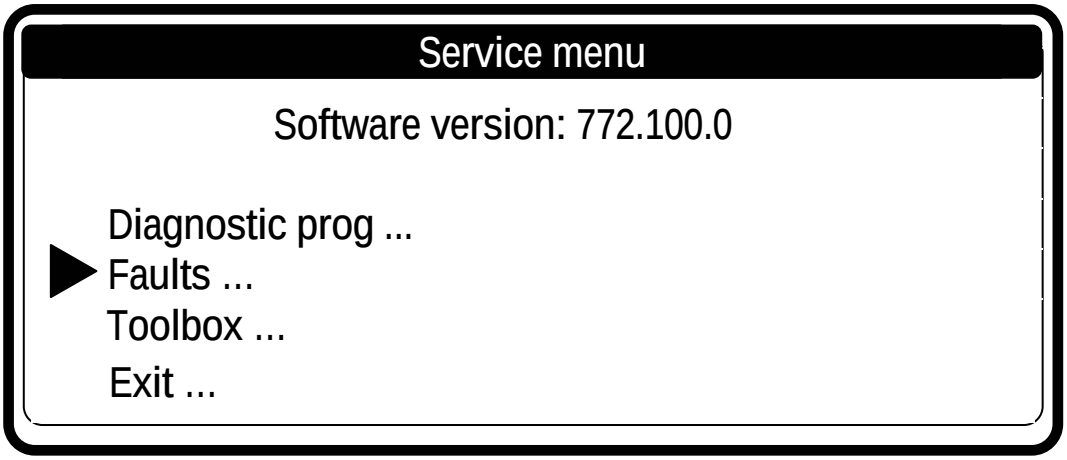
- The Software Version Number.
- An overview of the 20 last failure messages.
- Statistics for 10 general error messages.
- Pulley ratio.
- An overview of the input states.
- Switching On the Inverter for a technical intervention.
- Reset Cycle Counter and Statistics Error Messages.

❑ HOW TO GET INTO THE SERVICE MENU



The SERVICE menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).

- The program overview is shown.
- Turn the washing machine to the setup mode, (see chapter 3.4.).
- The Main menu is now available.
- Press the **ARROW DOWN** button to select the SERVICE menu.
- Press the **ENTER** button to make your selection.
- Now you will see the Service Menu Screen.



Menu Item	Info
Software XXX Version: 772.100.0	The software version number.

❑ FAULTS MENU

Menu Item	Info
View Fault Messages ... 1 Fault 1: E XXX: YYYYYYYYYYYY ... 20 Fault: E XXX: YYYYYYYYYYYY	- check the last 20 fault messages from the Err log Fault N° 1 : the last occurred error message ... Fault N° 20 : the last - 20 occurred error message E XXX : The Error message number YYYYYYYYYYYY : The Error message name (If no messages are displayed, this means that no Errors have occurred.)
Erase Fault Messages No	- the Error log is reset by erasing the Fault Messages.
View Fault Statistics ... 1 No Drain 0x ...	The Fault Statistics are an accumulation of Error messages that have appeared over a long period. With this information the technician has an indication on which parts an intervention should be needed. (the statistics are reset by the „Reset Service Counts“ menu item in the toolbox menu) **The List with Statistics:** ◆ No Drain : E2 + E37 ◆ Door Switch : E6 + E7 + E8 + E9 ◆ No Fill : E11 + E40 ◆ No Heating : E13 + E14 ◆ Temp Sensor : E25 ◆ Level Sensor : E24 ◆ Out of balance switch : E3 ◆ Invert Com : E27 ◆ Invert Alarm : E26 + E28 + E29 + E72 + E73 + E74 + E75 ◆ **Invert OV Alarm : E303 + E304 + E305**

❑ TOOLBOX MENU

The purpose of the Toolbox Menu is to give support at technical interventions.

Menu Item	Info
View Input States ? 1 Input 1 On ... 20 Input 20 Off	The Input states for Input 1, …, Input 20. The exact function of the inputs can be found on the electrical drawing of the washing machine programmer. - if the Input state is Off, the Input signal is low. - if the input state is On, the Input signal is high.
Imbalance Statistics ... Imbalance ... 1 ...0,5 0 ... 31 > 15 0 Current ... 1 I0 0 ... 4 I3 0	Diagnostic information on imbalance of the machine.
Inverter Power Off	By this function it's possible to switch on the power of the inverter if a technical intervention is needed. ⚠ **Attention!** **SPECIAL CARE HAS BEEN TAKEN AT THE INITIALIZATION OF THE PARAMETERS OF THE FREQUENCY INVERTER. THE MANUFACTURER IS NOT RESPONSIBLE FOR THE WRONG BEHAVIOR OF THE WASHING MACHINE IF THE OWNER HAS INSTALLED NEW PARAMETER SETTINGS IN THE INVERTER THAT DO NOT CORRESPOND WITH THE ORIGINAL SETTINGS AT THE FACTORY.**
Pulley Ratio X.XX	The Pulley Ratio allows to verify if the motor pulley and the drum pulley have the correct size by calculating the pulley ratio.
Reset Service Counts No	Once the washing machine has reached the total number of wash cycles like set at the „Service Interval" a warning is given at the end of each cycle until the Cycle Counter has been reset.
RTC Time XX:YY:ZZ	The Time value of the Real Time Clock. XX : Hours, YY : Minutes, ZZ : Seconds
RTC Date AA:BB:CC	The Date value of the Real Time Clock. AA : Day, BB : Month, CC : Year
Adjust Clock ... Hour XX Minutes YY Day AA Month BB Year CC	Set the correct Date and Time for the RTC.
Exit	Return to Service Menu

8.6. DIAGNOSTIC PROGRAM

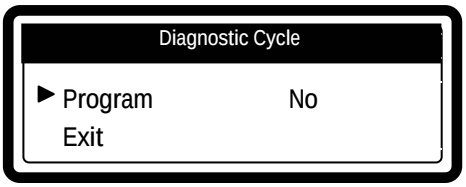
The purpose of the diagnostic program is to test the wash machine functions one by one.

❑ HOW TO GET INTO THE DIAGNOSTIC MENU

The Diagnostic menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).

The program overview is shown.
Turn the washing machine to the setup mode, (see chapter 3.4.).
The Main menu is now available.
Press the **ARROW DOWN** button to select the Service menu.
Select the Diagnostic Program menu at the Service menu.

- Select diagnostic program.



- Press **START** if you want to start the diagnostic program.

❑ TEST SEQUENCE

- **Display test and door lock test**
- **Sensor test**
- **Motor test**
- **Water fill, heating and drain test**
- **BASIC Diagnostic Wash program**

Test	Info	Explanation
1	Black display followed by a Text display.	➔ Door lock test (locks and unlocks 5 x the door) ➔ Display test
***	None	➔ Sensor test (all wash machine sensors are tested)
3	Motor Reverse	➔ Wash speed (inverse direction high spin)
4	Motor Stop	⇒ Standstill motor
5	Motor Forward	➔ Wash speed (same direction high spin)
6	Motor Distribute	➔ Distribution speed (same direction high spin)
7	Motor Low spin	➔ Low spin speed (same direction high spin)
8	Motor High spin	➔ High spin speed (the drum is turning away from the soap box)
9	Motor Stop	➔ Free run or controlled deceleration
20	Inlet I1	➔ The machine takes water by inlet 1
21	Drain 1	➔ The water is drained by drain valve 1
22	Inlet I2	➔ The machine takes water by inlet 2 until the safety level for heating is reached ➔ Heating activated (only if **Wait temp = on**)
23	Drain 1 (2)*	➔ The water is drained by drain valve 1
24	Inlet I3	➔ The machine takes water by inlet 3
25	Drain 1	➔ The water is drained by drain valve 1
26	Inlet I4	➔ The machine takes water by inlet 4
27	Drain 1	➔ The water is drained by drain valve 1
28	Inlet I5	➔ The machine takes water by inlet 5
29	Drain 1	➔ The water is drained by drain valve 1
30	Inlet I6	➔ The machine takes water by inlet 6
31	Drain 1	➔ The water is drained by drain valve 1
32	Inlet I7	➔ The machine takes water by inlet 7
33	Drain 1	➔ The water is drained by drain valve 1
34	Inlet I8	➔ The machine takes water by inlet 8
35	Drain 1	➔ The water is drained by drain valve 1
50	Tumble	⇒ The tumble sequence
	Unload	⇒ End of the Diagnostic Cycle

Note : * The second drain valve will be opened if a second drain valve has been selected in the Configuration menu.

*** No number 2 is displayed at the sensor test as this takes only a fraction of a second.

Remark!

If **++ ++** is displayed at the motor test sequence, then you can Advance (Press **START**) the test Sequence.

❑ BASIC Diagnostic Wash program

	Sequence	Supply	Inlet	Temp.	Level	Wash action	Time	R.P.M.
Step 1	Wash	2=30”	2-3-6-8	40°C	NL	A=12“ R=3“	6 min	W
	Drain	-	-	-	-	-	30 s	D
Step 2	Rinse 1	-	1-2-7	-	NH	A=12“ R=3“	1,5 min	W
	Spin	-	-	-	-	-	1 min	L
Step 3	Final Rinse	3=30”	4-7	-	NL	A=12“ R=3“	2 min	W
	Spin	-	-	-	-	-	4,5 min	H
	Slowdown	-	-	-	-	-	1 min	-
	Tumble	-	-	-	-	A=12“ R=3“	30 s	W

Error messages :

- If the computer detects some problem during the Diagnostic Help Program, a diagnostic error message is generated.
- Check also the Error Log List in the Service-menu.
- Check the error handling and explanation of the error messages.

8.7. PROBLEM CHECK LIST

Problem	Cause	Solving the problem
When the power is switched on : the display is not illuminated	• no external power	• Switch on the external power supply • verify the external power to the machine
	• the emergency button is activated	• deactivate the emergency button
	• the power connector is not connected on the board	• connect the power connector
	• the power connector is inverse connected	• check the wiring and connect the connector as it must be
	• the fuse on the wash computer has burned	• if the transformer is broken replace the wash computer
	• disconnect the input connector A & B	Check the wiring and the voltage at the power Connector
	• The connector between the CPU and the I/O board of the wash computer is either absent or incorrectly pushed in.	If the transformer is still OK change the Fuse • if the display is lighting up: verify if the input signals or the +16Vdc Supply Signal are touching the cabinet
The display is illuminated, but it's difficult to read the text on the display.	• the brightness is not Ok	• Change the value for Brightness, Viewing Angle in the Configuration Menu until you get a bright display.
The display just shows "Bootloader" but the application does not run.	• There is no SW loaded in the application	• Load the application software from the USB flash drive
The machine is not responding on pressing the keyboard buttons	• no button is functional	• check if the connector „K" of the keyboard is well connected
	• there is no beep signal when the buttons are pressed	• check if the connector „K" of the keyboard is well connected
The coins have been inserted but the price does not count down on the display.	• The contact attached to the slot is not functioning	• Check correct functioning of the slot contact. Check that positive impulses are generated
	• The optical sensor attached to the slot is not functioning	• Check correct functioning of the optical sensor. Check that positive impulses are generated.
	• check the electrical wiring of the slot	• If the electrical connection is faulty, repair it.
	• Make sure that you entered the coin value in the Payment menu	• Enter correct coin value in the Payment menu
The machine is not behaving as expected	• if the wrong machine type is selected the wrong outputs will be activated	• check if the right machine type is selected in the Configuration Menu.
A program is started, but the outputs are not activated	• check if connector „R" is connected	• connect the connector at the correct position
Wait is displayed and a counter is counting down	• this is a wait state caused by a power interruption or a safety sequence at the end of the process	• wait until the counter has reached 0 • do not switch off/on the power again as you will restart the counter
Unload is displayed and the Door is Open	• Check if the „Door Switch" is still closed	• If the „Door Switch" is broken, replace the Door Switch"
Wrong water level (the water level sensor must not be calibrated)	• check if the programmed water levels are the correct ones	• set the right water levels
	• check if the right machine type is selected in the Configuration Menu	• select the right machine type in the Configuration Menu
	• you have changed the machine type, but the standard water levels do not change	• the standard water levels can only be reinitialized by programming new values or by loading the Standard Wash programs again.
The drum is not turning (No error message will be generated)	• Check if the belt is broken	• Check the tension of the belt or replace the belt
	• Check the applied motor voltage	• repair the motor power supply circuit
	• Check if the motor is still functional	• change the motor if needed
	• Check the Inverter	• send a request for more info to the manufacturer

8.8. EXTERNAL COMMUNICATION PROBLEMS

The machine communicates with the PC (TraceTech SW) via the RS485 line. If the external communication is not working, check the connection between the PC and machine. Check also if you have selected the right machine communication address.

8.9. EXPLANATION ERROR MESSAGES

FAILURE 2: DRAIN FAILURE

Failure 2 occurs when the electronic timer detects that the water is not drained after 3 minutes in a Drain or Spin Sequence. The failure message is displayed at the end of the cycle.

DIAGNOSE:

1. Check the drain tube of the washing machine	If the drain tube is blocked: repair the drain tube
2. Check the drain valve	If the drain valve is defective: replace the drain valve
3.Check the wiring: When the drain valve is switched Off, the drain valve should be open. (normal open)	If the wiring is damaged: repair the wiring

FAILURE 3 : OUT OF BALANCE

Failure 3 occurs when the out of balance sensor is activated before the spin sequence has started.

DIAGNOSE:

1. Check if the out of balance switch is broken. (Make sure shipping braces are removed)	If the out of balance switch is broken: replace the out of balance switch.
2. Check the position of the out of balance switch.	If the out of balance switch is not correctly mounted: install the out of balance switch properly.
3. Check the wiring, the contact of the out of balance switch is normally closed. Check connector pins for loose connections.	If there is no continuity: repair the wiring.

FAILURE 4 : OUT OF BALANCE NORMAL SPIN

Out of balance at normal Spin will occur when a washing machine is badly loaded.
The machine will try up to 5 times to redistribute the laundry in the drum before the spin step is skipped.
This function will protect the machine against overload and assures the normal lifetime of the washing machine.

DIAGNOSE:

1. Check the position of the out of balance switch.	If the out of balance switch is not correctly mounted, install the out of balance switch properly.
2. If this failure occurs often.	Use a fully loaded drum. A completely filled drum produces less unbalance than a drum that is only filled for 1/3.
3. Check the wiring if there is no bad connection. The out of balance sensor is a NC contact.	If there is a bad connection: repair the wiring.

FAILURE 5 : OUT OF BALANCE HIGH SPIN

Failure 5 occurs when the out of balance sensor is activated during high spin. This failure indicates that there will probably is a mechanical defect.

DIAGNOSE:

1. Check the position of the out of balance switch.	If the out of balance switch is not correctly mounted, install the out of balance switch properly
2.Check the springs and the other mechanical parts that fix the drum.	If you see a broken mechanical part: replace the broken part
3. Check the wiring if there is a bad connection.	If there is a bad connection: repair the wiring
4. Check that the washing machine is installed correctly and stable.	Adjust the supports at the bottom of the washing machine.

FAILURE 6 : DOOR SWITCH FAILURE

While a wash cycle is running the internal door lock systems are scanned all the time.

If during the wash cycle the wash computer detects that the „DOOR SWITCH“ is not closed then the machine will immediately stop all its functions. The door will stay locked.

DIAGNOSE:

1. Check the well functioning of the door switch. The door switch is a normal open contact.	If the door switch is broken or malfunctions replace the door switch.
2. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring
3. Check the good functioning of the „DOOR SWITCH“ at the inputs menu.	If the input is not functional replace the wash computer.

FAILURE 7: DOOR LOCK SWITCH FAILURE

While a wash cycle is running: the internal door lock systems are scanned all the time.
If during the wash cycle the electronic wash computer detects that the door lock switch is not closed, then the machine will immediately stop all its functions. The door will stay locked.

DIAGNOSE:

1. Check the well functioning of the door lock switch. The door lock switch is a normal open contact.	If the door lock switch is broken or doesn't function correct: replace the door lock.
2. Check the door lock coil	If the door lock coil doesn’t function: replace the door lock.
3. Check the mechanical functionality of the door lock.	If the door lock is not functioning mechanically: replace the door lock.
4. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring
5. Check the good functioning of the door lock switch at the inputs menu.	If the input is not functional replace the wash computer.

FAILURE 8: DOOR LOCK CHECK AT START FAILURE

The washing machine will not start a new process when the door is not locked after pressing the **START** button. Failure message 8 will be generated each time the door lock sequence could not be finished once started.

DIAGNOSE:

1. Check door handle for damage traces and centering against door lock.	If handle is damaged, replace handle. If not good centered, center door against door lock.
2. Check if the input connector DL (door lock) is connected.	If the input connector DL (door lock) is not connected : connect connector DL.
3. Check the well functioning of the door lock switch.	If the door lock switch is broken or doesn't function correct: replace the door lock
4. Check the door lock coil.	If the door lock coil doesn't function: replace the door lock coil.
5. Check the mechanical functionality of the door lock.	If the door lock is not functioning mechanically and can not be corrected: replace the door lock system.
6. Check the continuity of the wiring.	If the wiring is not continuous : repair the wiring.
7. Check the output relay that powers the door lock coil.	If the relay is broken, replace the wash computer.
8. Check the good functioning of the door lock switch at the inputs menu.	If the input is not functional replace the wash computer.

FAILURE 9: DOOR LOCK SWITCH FAILURE AT CYCLE END

At the end of the cycle the Door Lock coil is switched off and the door lock switch must open its contact. If within 30 sec the „DOOR LOCK SOLENOID SWITCH" doesn't change state failure message 9 will be displayed. As long the contact stay closed, failure message 9 stays on the display. If the contact should change state, the error message will be removed from the display and machine will be ready for use again.

DIAGNOSE:

1. Check the functioning of the door lock switch.	If the door switch is broken or doesn't function correct: replace the door lock.
2. Check the door lock coil.	If the door lock coil doesn't function: replace the door lock.
3. Check the mechanical functionality of the door lock.	If the door lock is not functioning mechanically and can not be corrected: replace the door lock system.
4. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring.
5. Check the output relay that powers the door lock coil.	If the relay stays closed and the relay is broken, replace the wash computer.

FAILURE 11: FILL FAILURE

Failure 11 occurs when the water level has not reached its target level in x minutes.

x = Max fill time, a value that can be programmed at the Initialization Menu.

⚠ **ATTENTION!** The rubber hose must be fixed with a flexible clamp on the electronic water level sensor.

DIAGNOSE:

1. Check if the programmed Max fill time in the Initialization menu is acceptable.	If the water flow is very slow, increase the value for the Max fill time. The default value is 10 minutes.
2. Check if the external water valves are open.	If the water valves are closed: open the water inlet valves.
3. Check if the water inlet valves are not blocked by dirt.	If the water inlet valves are blocked by dirt: clean the water inlet valves or replace the water inlet valves.
4. Check the coil of the water inlet valves.	If the coil of the water inlet valve is electric open: replace the coil or the complete water inlet valve.
5. Check the drain valve.	If the drain valve is defective: replace the drain valve.
6. Check if the rubber hose (for measuring the water level) is well mounted on the electronic level sensor and on the drain valve.	If the hose is not well mounted: install the rubber hose properly.
7. Check if the hose on the electronic sensor is air tight.	If the air hose is not air tight: replace the air tube.
8. Check if the hose doesn't contain water. (siphon)	If the air tube contains water: remove the water and fix the hose so that it doesn't work as a siphon.
9. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring.
10. Check the output relay that powers inlet valves and the drain valve.	If the relay receives a command signal but is not closed, replace the wash computer.

FAILURE 12: OVERFILL FAILURE

If the target water level is X units above the target level then failure message 12 will be displayed.
The fault message will not be generated when the user is advancing from a sequence with a high water level to a sequence with a low water level.

X= „Max. level Overfill", a value that can be programmed at the Initialization menu.

DIAGNOSE:

1. Check if the water inlet valves are broken.	If the water inlet valves are broken: clean or replace the water inlet valve diaphragms.
2. Check if the water pressure is too high.	Lower the water pressure.
3. Check the output relay that powers the inlet valve.	If the relay stays closed and the relay is broken, replace the wash computer.

In Case of Steam Heating :

If the steam has not enough heating power (too low temperature), the machine will be filled with too much water at the heating part. This will result in an increased water, energy and supply consumption.

It's strongly recommended that the heating installation works with enough heating power.

A simple solution can also be to reduce the programmed target water level. As less steam will be required, the normal water level should be reached. In the initialization menu it is also possible to adjust the alarm level to avoid the error message. (= not recommended).

FAILURE 13: HEATING FAILURE

If the heater elements are not functioning : message 13 will be displayed.
The message is generated when the temperature is not raising with 3°C in 10 minutes time.

DIAGNOSE:

1. Check if the heating contactor is activated.	If the heating contactor is not activated: repair the wiring or replace the contactor.
2. Check if the heating elements are heating.	If the heating elements are not heating: Repair the wiring or replace the defective heater elements.
3. Check if the temperature sensor is functioning.	If the temperature sensor is defective: replace the temperature sensor.
4. Check the output relay that powers the heating contactor.	If the relay is broken, replace the wash computer.

FAILURE 14: HEATING TIME FAILURE

When after x minutes the target temperature is not reached (for a machine set as wait for heat):
Message 14 will be displayed.

x = the programmed Max heating time in the Initialization Menu.

DIAGNOSE:

1. Check if the programmed Max Heating time in the Initialization menu is acceptable.	If the machine has a small heating capacity, increase the value of the Max heating time. The default is 60'. (for machines with big heating capacity)
2. Check if the heating resistors are heating.	If the heating resistors are not heating: Repair the wiring or replace the defective heater elements.
3. Check the water temperature.	If the hot water supply temperature is too low: increase the temperature of the hot water.
4. Check if the temperature sensor is functioning.	If the temperature sensor is defective: replace the temperature sensor.

FAILURE 15: TOO HOT

When the water temperature is 15°C above the target temperature : message 15 will be displayed.

For evaluation of the problem, you can follow the water temperature of the bath on the display of the washing machine by pressing the Service Button on the keypad.

DIAGNOSE:

1. Check if correct water inlet valves have been programmed. If only hot water inlet valves have been programmed, and if the hot water supply has a temperature value above the programmed wash sequence value then the temperature of the wash bath will be too high.	Choose the correct water inlet valves for the wash sequence when you create or adjust the parameters of the wash program. Don't program only hot water inlet valves but also cold ones!

2. Check if the correct water inlet valves are Functional. If the cold water inlet valves are not functional or if the main cold water supply is not available and only hot water inlet valves are open, and if the hot water supply has a temperature value above the programmed wash sequence value then the temperature of the wash bath will be too high.	See diagnostics Failure 11 : Fill Failure
3. Check the water temperature.	If the temperature of the supplied hot water is too high: decrease the temperature of the hot water.
4. Check if the temperature sensor is functioning.	If the temperature sensor is defective: replace the temperature sensor.
5. Check if the heating contactor stays closed. (check voltage to contactor coil.)	If the heating contactor stays closed : Replace the heating contactor.
6. Check the output relay that powers the heating contactor.	If the relay stays closed and the relay is broken, replace the power board.
7. Check the output relay that powers the heating contactor.	If the relay is not broken, but receives a not allowed signal from the wash computer, replace the wash computer.

FAILURE 16: COIN BLOCKING 1

When the input for coin drop 1 is blocked for more then 5 seconds: message 16 will be displayed.

Case Payment mode = ON.

Fault 16 will be displayed if the external start release signal is high for more then 10 seconds when the door has been opened at the end of the program.

DIAGNOSE:

1. Check the well functioning of coin drop 1	If the coin drop micro contact or optocoupler is not functioning 100% : replace the coin drop
2. Check the continuity of the wiring	If the wiring is not continue : repair the wiring

FAILURE 17: COIN BLOCKING 2

When the input for coin drop 1 is blocked for more then 5 seconds: message 17 will be displayed.

DIAGNOSE:

1. Check the well functioning of coin drop 2	If the coin drop micro contact or optocoupler is not functioning 100%: replace the coin drop
2. Check the continuity of the wiring	If the wiring is not continue: repair the wiring

FAILURE 21: OVERFLOW FAILURE

When the water level is raising above the hole of the overflow tube: message 21 will be displayed.

DIAGNOSE:

1. Check if the overflow hole and tube isn't blocked.	If the overflow tube is blocked: repair the tube.
2. Check if the drain tube isn't blocked.	If the drain tube is blocked: repair the drain tube.
3. Check the water inlet valves.	If the water inlet valves are broken: replace the water inlet valves.
4. Check the output relay that powers the water inlet valve.	If the relay stays closed and the relay is broken, replace the wash computer.

FAILURE 24: DEFECTIVE LEVEL SENSOR

If the level sensor is broken then fault 24 will be displayed. The fault is only generated when the machine is in standby mode and no wash cycle is running.
The fault can only be erased by switching off and on the power.

DIAGNOSE:

1. Check the level sensor visually.	If you see some damage: replace the wash computer.
2. If the fault is persistent.	Replace the wash computer. (be sure there is no drain problem)

FAILURE 25: DEFECTIVE TEMPERATURE SENSOR

When the temperature sensor is broken then fault 25 will be displayed. The fault is only generated when the machine is in standby mode and no wash cycle is running.
The fault can only be erased by switching off and on the power. If the fault is still available after switching on the power : fault 25 will be displayed again.

DIAGNOSE:

1. Check if the temperature sensor is connected on the PCB Board.	The Female connector must be connected with the Male connector T of the PCB board.
2. Check the temperature sensor.	If the temperature sensor is broken: replace the temperature sensor.
3. Measure the resistance of the sensor.	If the resistance is not OK: replace the temperature sensor.
4. Check if the earth wire is at the middle position of the connector.	If the earth wire is not at the middle position: put the earth wire in the middle position of connector T.
5. Check the PCB board visually.	If you see some damage : replace the wash computer.
6. If the fault is persistent.	Replace the wash computer. Be sure that the problem is related to the PCB board and not to a defective temperature sensor.

FAILURE 26: UNDEFINED MITSUBISHI FREQUENCY INVERTER ERROR CODE

Occurs if the inverter gives an error message which is not recognised by the wash computer.

FAILURE 27: COMMUNICATION FAULT INVERTER

This fault will only occur when there is no communication between the wash computer and the inverter.
The wash computer is sending requests to the inverter, and the inverter is sending answers to the wash computer. If the wash computer is not receiving the answers within 5 seconds then fault 27 will be displayed.

DIAGNOSE:

1.For a new inverter or wash computer : Check if the right machine type and Washing machine power supply have been selected.	When the Inverter parameters are loaded at the Configuration menu, make sure that you have selected the right machine type and washing machine power supply.
2. Check if the door is closed and locked.	If the door is not closed then the inverter can not be powered. Close the door. If the door lock is broken, repair the door lock system.
3. Check if the inverter is energized. If the inverter power LED is not illuminated, measure if there is supply voltage at the inverter input terminals.	Repair the power supply. If the supply voltage is OK and the power LED is not illuminated, replace the inverter.
4. Check if the fuses are still operational.	If the fuses are blown up : replace the fuses.
5. Check if the safety inverter contactor is activated.	If the safety contactor is broken: replace the contactor.
6. Check if the connectors on both sides of the	Connect the connectors on the wash computer and

communication cable are still connected.	the inverter.
7. Check the wiring for continuity.	Repair the wiring.
8. Check if the output relays that activates the safety inverter contactor is functional.	If the relay is broken, replace the wash computer.

FAILURE 28: THT (Mitsubishi) TIME OUT

Fault 28 occurs when the wash computer can not handle the THT (Mitsubishi) / E.OL (KEB) fault of the frequency inverter.
This fault is a specific fault of the frequency inverter caused by an over current.

DIAGNOSE:

1. Check if the correct machine type is selected at the Configuration Menu.	If the wrong machine type is selected, enter the right machine type.
2. Check if the dedicated inverter parameters have been loaded by the wash computer.	Load the correct Inverter parameters.
3. Check if the power supply is sufficient high and stable during extraction with load.	Repair the power supply.
4. Check if the drum rotates normally by hand.	Repair / clean what is necessary.
5. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

FAILURE 29: OV3 (Mitsubishi) TIME OUT

Fault 29 occurs when the wash computer can not handle the OV3 (Mitsubishi).
This fault is a specific fault of the frequency inverter caused by an overvoltage.

DIAGNOSE:

1. Check if the correct machine type is selected at the Configuration menu.	If the wrong machine type is selected, enter the right machine type.
2. Check if the dedicated inverter parameters have been loaded by the wash computer.	Load the correct Inverter parameters.
3. Check if there was a high unbalance during extraction, which can be caused by putting only half loads in the machine.	Put always a full load in the machine drum. Do not put other material than textile linen (fabrics) in the machine.
4. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

FAILURE 31: INITIALIZATION FAULT INVERTER

Fault 31 occurs when something goes wrong while the wash computer writes the dedicated inverter parameters into the inverter EEPROM memory. This fault message means that not all dedicated inverter parameters have been loaded. As a result the inverter will not work in a correct way.

IT IS NOT RECOMMENDED TO USE THE WASHING MACHINE AS THE INVERTER WILL FUNCTION WITH THE WRONG PARAMETERS SETTINGS.

DIAGNOSE:

1. Check if the door is closed and locked.	If the door is not closed, close the door. If the door is not locked, repair the door lock system.
2. Check if the inverter is energized.	If the inverter is not energized, check the power to the inverter (see fault 27).
3. Write the parameters once more into the inverter.	If the fault is persistent, contact the manufacturer.

FAILURE 32: VERIFICATION FAULT INVERTER

Fault 32 occurs if a wrong parameter is detected at the verification of the inverter parameters. After writing the inverter parameters in the inverter, the parameters are verified one by one to ensure that they have been correctly loaded. This fault message means that at least one of the dedicated inverter parameters is wrong. As a result the inverter will not work in a correct way.

DIAGNOSE:

1. Check if the correct machine type is selected in the Configuration Menu.	If the wrong machine type is selected, enter the right machine type.
2. Check if the door is closed and locked.	If the door is not closed, close the door. If the door is not locked, repair the door lock system.
3. Check if the inverter is energized.	If the inverter is not energized, check the power to the inverter (see fault 27).
4. Write the parameters once more into the inverter.	If the fault is persistent, contact the manufacturer.

FAILURE 35: WRONG SOFTWARE VERSION

When a totally new software that isn't backward compatible with previous software versions is loaded, then the software will detect that the old and new software's are not compatible.
You have to reconfigure the Wash Computer. See chapter 4.

⚠ **ATTENTION!**
ALL THE CUSTOM SETTINGS WILL BE ERASED IN THE WASH COMPUTER BY LOADING THE FACTORY SETTINGS.

After reconfiguration of the Wash Computer, fault 35 can only be erased by switching the power Off/On.

FAILURE 37: DRAIN FAILURE AT THE SPRAY SEQUENCE

Failure 37 occurs when the electronic timer detects that the water is not drained after 3 minutes at the Spray Sequence.

DIAGNOSE:

1. Check the drain tube of the washing machine.	If the drain tube is blocked: repair the drain tube.
2. Check the drain valve.	If the drain valve is defective: replace the drain valve.
3. Check the wiring: When the drain valve is switched Off, the drain valve should be open. (normal open)	If the wiring is damaged: repair the wiring.

FAILURE 39: EMPTY SOAP SUPPLY BOX

Failure 39 occurs when the electronic timer detects that the Soap Reservoir is empty.

To avoid that No Liquid Soap is added at the wash process, the operator gets a warning when a Liquid Soap Supply Reservoir is almost empty.

DIAGNOSE:

1. Check if the Liquid Soap Supply is empty.	Add Soap to the Liquid Soap Supply System.

FAILURE 41: SERVICE DUE WARNING

Failure 41 occurs when the cycle counter of the Electronic timer has reached the Programmed Value for Service due. The fault message will be erased by opening the door. If the cycle counter has not been reset the message will appear again at the end of the next wash cycle.

DIAGNOSE:

1. Check the cycle counter in the Service info.	You can reset the cycle counter in the Service Menu.

FAILURE 42: NO NETWORK CONNECTION

Failure 42 occurs when there is No Network Connection available.

For more information about the networking see manual "TRACE-TECH".

DIAGNOSE:

1. Check the network cable.	If the network cable is broken, replace the network cable.
2. Check the USB-RS485 converter.	If the converter is out of order, replace it.

FAILURE 43: WRONG VOLTAGE RANGE SELECTION

Failure 43 occurs when the wrong Voltage Range has been selected in the Configuration menu.

Depending on the machine type and the inverter type, certain Voltage ranges are not allowed.

DIAGNOSE:

1. Check the Machine Identification plate at the back of the machine.	Select the same Voltage range in the Configuration menu as on the Identification plate of your washing machine. Menu Item C:Supply Voltage

PORUCHA 44: INCORECT SELECTION OF MACHINE TYPE

The Error 44 is displayed when the user makes a selection of a rigid-mount machine (without safety switch) on a freestanding machine fitted with a safety switch) .

POSTUP:

1. Check the machine name plate placed on the back of the machine.	Select the right machine type in the Configuration Menu.

FAILURE 80: TIME OUT INPUT 16

Failure 80 occurs when the On Hold Signal of the Liquid Supply Central Dispensing System stays high for more then 1 hour. At Input 16 of the wash computer, the Liquid Supply Central Dispensing System sends a „High“ signal that makes that the washing machine waits at the Wash Sequence to add Liquid Supply until the Liquid Supply Central Dispensing System has pumped its liquid supplies inside the washing machine. When the On Hold signal is „LOW“ the wash program is NOT put On Hold.

When the On Hold signal is „HIGH“ the wash program is put On Hold.

In normal operation the On Hold Signal of the Liquid Supply Central Dispensing System must not stay high for more then 1 hour, as otherwise the machine will not finish the running wash cycle anymore.

DIAGNOSE:

1. Check if the Central Soap Dispensing System operates correctly.	Repair Liquid Supply Central Dispensing System in case of failure.
2. Check if the wiring of the input signal „On Hold“ is not damaged.	If the wiring is damaged: repair the wiring.
3. Check the wash computer. (Inputs can be checked one by one in the Service menu)	If the input of the wash computer is not functional, replace the wash computer.

FAILURE 85: RTC LOW BATTERY

Failure 85 occurs when there is no battery available at the real time clock, or if the power of the battery is too small to make the real time clock run correctly.

DIAGNOSE:

Replace the CPU board.

FAILURE 95: WATCH DOG

If the watch dog has been activated, message 95 is logged in the Error log register. If this occurs often, ask the help of a technician.

FAILURE 300-353: MITSUBISHI INVERTER ALARM MESSAGE

Always make sure you have the correct inverter parameter settings in the inverter, especially when you have replaced an inverter. If you are not sure go to the Configuration menu and select „Inverter Menu…“, set the correct machine type and supply voltage and load the parameters from the wash computer to the inverter once more. If the correct parameters are not in the inverter all kind of inverter alarms may occur. See also inverter manual (available on request) for more info.

Err N°	Failure	Failure Name	Explanation
300	Err OC1	Overcurrent	See detailed explanation below
301	Err OC2	Overcurrent	See detailed explanation below
302	Err OC3	Overcurrent	See detailed explanation below
303	Err OV1	Overvoltage	See detailed explanation below
304	Err OV2	Overvoltage	See detailed explanation below
305	Err OV3	Overvoltage	See detailed explanation below
306	Err THT	Inverter overload	See detailed explanation below
307	Err THM	Motor overload	See detailed explanation below
308	Err FAN	Fan stopped	Repair the cooling fan (clean or replace if necessary)
309	Err OLT	Stall prevention	See detailed explanation below
310	Err BE	Brake transistor	Short circuit in brake transistor circuit. Power off immediately! Replace the inverter.
311	Err GF	Ground fault	Output overcurrent to ground. 1) Check the motor cable and motor for ground faults. 2) Disconnect the motor cable and try again. If you still have the error, replace the inverter.
312	Err OHT*	Ext thermal relay	External thermal relay (TRM module, see electrical scheme) for motor protection tripped. TRM module was only used on certain machines with MCB controller and A500 inverter.
313	Err OPT	Option	See detailed explanation below
314	Err PE	Corrupt memory	Memory was overwritten too many times. Replace inverter.
315	Err PUE	PU leave out	See detailed explanation below
316	Err Ret*	Retry no over	The max number of retries after fault reached. The actual inverter error code that causes the problem and which should be solved, is stored just before Err 316 in the error log.
317	Err CPU	CPU Fault	Communication error of built in CPU. Replace inverter
318	Err E.6	CPU Fault 6	Internal fault, If the fault is persistent, replace the inverter
319	Err E.7	CPU Fault 7	Internal fault, If the fault is persistent, replace the inverter

Err N°	Failure	Failure Name	Explanation
320	Err IPF	Instantaneous power failure	Power failure between 15 and 100ms. Check for bad contacts in the power circuit. Repair the power supply.
321	Err UVT	Under voltage	Supply voltage too low. Check jumper P/+-P1.
322	Err LF	Output phase failure	Phase open detected on inverter output. Check for bad contacts or defect (open) motor windings.
323	Err OP1*	Option slot 1	Problem with the option in slot 1 or option contact fault
324	Err OP2*	Option slot 2	Problem with the option in slot 2 or option contact fault
325	Err OP3*	Option slot 3	Problem with the option in slot 3 or option contact fault
326	Err CTE	PU short circuit	Short circuit on the RS485 communication connector. Check for short circuit in the communication cable.
327	Err P24	24VDC short circuit	Short circuit on the 24VDC power output (PC terminal). Check for short circuit on the inverter control terminals.
328	Err MB1*	Brake sequence error 1	Sequence errors during use of the brake function.
329	Err MB2*	Brake sequence error 2	
330	Err MB3*	Brake sequence error 3	
331	Err MB4*	Brake sequence error 4	
332	Err MB5*	Brake sequence error 5	
333	Err MB6*	Brake sequence error 6	
334	Err MB7*	Brake sequence error 7	
335	Err FIN	Heatsink overheat	See detailed explanation below
336	Err OSD*	Speed deviation excess	Too big speed deviation during vector control
337	Err ECT*	Encoder signal loss	Problem with the encoder signal
338	Err E.1*	Option alarm(connector1)	Occurs if there is a contact fault of the connector between the inverter and the communication option or if the communication option is fitted to connector 1 or 2 or if the switch of the plug-in option is not on the default setting.
339	Err E.2*	Option alarm(connector2)	
340	Err E.3*	Option alarm(connector3)	
341	Err ILF*	Input phase failure	1 phase of the 3-ph input was lost for more than 1 second. Repair the 3-phase power supply.
342	Err PTC	PTC thermistor operation	Overtemperature of motor PTC(switch AU/PTC must be on PTC) 1) Check if motor cooling fan (if present) functions normally 2) check for contact faults in the wiring (see electrical scheme)
343	Err PE2	Parameter storage error	Problem with parameter storage (EEPROM failure). If the fault is persistent, replace the inverter.
344	Err CDO*	Output Current detection	Current exceeded the output current detection level

Err N°	Failure	Failure Name	Explanation
345	Err IOH	Inrush overheat	Resistor inrush current limit circuit overheated. 1) do not switch on/off the inverter frequently 2) Wait some time (15min) and try again 3) if the fault is persistent, replace the inverter
346	Err SER*	Communication error	Communication problem on the RS485 terminals connector
347	Err AIE*	Analog input error	Overcurrent or overvoltage on input terminal 2/4
348	Err USB*	USB communication error	USB communication check time interval has elapsed
349	Err OS*	Overspeed	Speed exceeded the limit during encoder feedback control
350	Err OD*	Position error	Too big difference between the position command and the position feedback during position control
351	Err EP*	Encoder phase error	Rotation command different than the motor rotation direction
352	Err E.11*	Opposite rotation deceleration	Rotation direction of the speed command different than the estimated speed causing overload
353	Err E.13	Internal circuit error	Problem with an internal circuit, replace the inverter

* : This option or function is not used. If you have this error anyway do the following :

1) Reload the inverter parameters.
2) If the fault is persistent, replace the inverter.

DIAGNOSE FAILURE 300-301-302: OC-ERRORS (OVERCURRENT)

1. Check if there is no short circuit on the output of the inverter. (loose wire of motor cable, motor windings, screws or other loose parts inside the motor terminal box,…)	Repair the short circuit.
2. Disconnect the motor cable from the inverter and try again.	If you still have the error with motor cable disconnected, replace the inverter.

DIAGNOSE FAILURE 303-304-305 : OV-ERRORS (OVERVOLTAGE)

If the DC-voltage on the capacitors is too high, the inverter will generate OV error.

1. Check if there was a high unbalance during extraction, which can be caused by putting only half loads in the machine.	Put always a full load in the machine drum.
2. Check if the supply voltage is not too high.	Reduce the supply voltage.
3. Check if the fault is persistent	If the fault is persistent, contact the manufacturer

DIAGNOSE FAILURE 306: THT-ERROR (INVERTER OVERLOAD)

If the output current of the inverter is abnormal high for some time, the inverter will go into THT-alarm state.

1. Check if the power supply is sufficient high and stable during extraction with load.	Repair the power supply.
2. Check if the drum rotates normally by hand. (no abnormal high friction)	Repair / clean what is necessary.
3. Check if the motor windings are OK.	Replace the motor.

DIAGNOSE FAILURE 307: THM-ERROR (MOTOR OVERLOAD)

If the motor current is higher than allowed for a longer time, the inverter will activate the electronic overcurrent protection to prevent the motor from overheating and the inverter will go into THM-alarm state.

1. Check if the drum rotates normally by hand.	Repair / clean what is necessary.
2. Check if the motor windings are OK.	Replace the motor.
3. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

DIAGNOSE FAILURE 309: OLT-ERROR (STALL PREVENTION)

The output frequency has dropped to minimum because of current limitation.

1. Check if the power supply is sufficient high and stable during extraction with load.	Repair the power supply.
2. Check if the drum rotates normally by hand. (no abnormal high friction)	Repair / clean what is necessary.
3. Check if the motor windings are OK.	Replace the motor.

DIAGNOSE FAILURE 313/315: OPT/PUE-ERROR (OPTION FAULT/PARAMETER UNIT LEAVE OUT)

If the inverter doesn't receive requests from the wash computer (= no serial communication), after some time (about 10-30 seconds), the inverter will go into OPT/PUE-alarm state.

1. Check at the end of the wash cycle, if the power supply contactor of the frequency inverter switches is switched off on all phases.	Replace the contactor if the problem is persistent.

The OPT/PUE-ERROR can happen occasionally by a very short general mains power supply interruption.

(Due to the power interruption, the inverter was not able to reset itself correctly.)

=> In such case the contactor must not be replaced. The Inverter must be reset by a longer power interruption.

DIAGNOSE FAILURE 335: FIN-ERROR (COOLING FIN INVERTER OVERHEAT)

If the heatsink temperature of the inverter crosses it's max allowed operation temperature, the inverter will go into FIN-alarm state.

1. Check if the cooling fan of the inverter (if present) rotates normally.	Replace the cooling fan on the inverter (on the heatsink of the inverter).
2. Check if the cooling fan in the washer that takes fresh air to the inverter's environment (if present) rotates normally.	Replace the cooling fan of the washer.
3. Check if the heatsink or the cooling fans are not clogged with dust/dirt so that fresh air can circulate freely.	Clean what is necessary.
4. Check if the ambient temperature of the washer is within the specified limits (see installation manual).	Take care that the ambient temperature is within the specified limits.

FAILURE 500-525: MEMORY ERRORS

If a memory error occurs then something is going wrong with the EEPROM.

Try to reload the washing Programs. Check for source of electrical „noise“.

FAILURE 560: USB NOT FOUND

The error message is displayed when an attempt to read from or write on a USB flash disk fails.

FAILURE 561: FILE NOT FOUND

The error message is displayed when the respective file is not found during an attempt to read from a USB flash disk.

FAILURE 562: EXPORT FAILED

The error message is displayed when an attempt to write onto a USB flash disk fails.

FAILURE 563: IMPORT FAILED

The error message is displayed when an attempt to read from a USB flash disk fails.

FAILURE 600-628: SOFTWARE ERRORS

Software errors must never occur. If a software error message occurs inform the manufacturer.

9. SERVICE INFORMATION

⚠ ATTENTION!
PROFESSIONAL REPAIRS IN ELECTRO INSTALLATION CAN BE CARRIED OUT ONLY BY SERVICE ORGANIZATION WITH PERMISSION GIVEN BY PRODUCER / SUPPLIER.

IN CASE OF ANY MAINTENANCE OR REPAIR, DISCONNECT THE MACHINE FROM SOURCE OF ENERGY AND WAIT UNTIL THE MACHINE COOLS DOWN OR DRAINS WATER.

PLEASE FOLLOW ALL INSTRUCTIONS IN THE MANUALS AND THE LABELS AND AS WELL AS VALID BASIC SECURITY LAWS IN ORDER TO PREVENT BURNS AND SCALDS AND INJURIES CAUSED BY ELECTRICITY.

9.1. MAINTENANCE

Remove dirt from the keyboard by a damp cloth after disconnection from the power supply.

⚠ ATTENTION!
DO NOT USE AGGRESSIVE SOAPS, CAUSTIC CHEMICALS, GASOLINE OR OTHER PETROCHEMICAL SUBSTANCES WHICH CAN DAMAGE THE KEYBOARD.

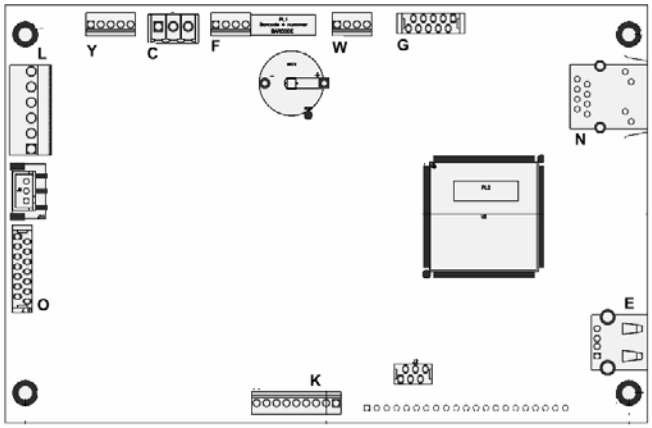
9.2. INFORMATION FOR SERVICE

Finding out the SW version:
- Press the INFO button and then the ADDITIONAL FUNCTIONS SELECTION button.
- The display shows the SW version in the 772.XXX.X format

Please always state the SW version together with the machine's serial number and the purchase order code in any correspondence with the manufacturer or when making any enquiries with the manufacturer.

9.3. PROGRAMMER CIRCUIT BOARD

CPU board



I/O board

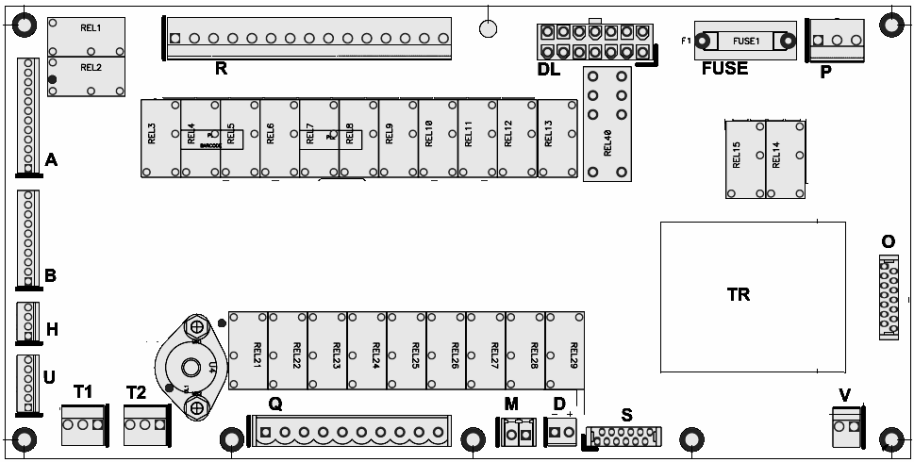


Fig.9.3.

> ⚠ **WARNING!**
> **CONNECTION TO THE WRONG VOLTAGE SUPPLY MAY CAUSE SERIOUS BODILY INJURY AS WELL AS DAMAGE TO THE ELECTRONIC PARTS AND TO THE WASHING MACHINE ITSELF.**

- Voltage : 200-240 Vac, 50/60 Hz
- Power : max 20 VA
- Outputs : 24 relays
- Serial interface: RS485 (2 wire) networking between wash computer and external device (PC Computer)
- Display : LCD display

9.4. INSTRUCTIONS FOR REPLACING THE PROGRAMMER BOARDS

- ❑ Switch off the main power supply.
- ❑ Open the cover plate of the washing machine.
- ❑ Remove the connectors from the programmer boards (including the connector between the CPU and I/O boards) and remove the small hose from the water level sensor.
- ❑ The CPU board of the programmer can be removed after you have unscrewed the securing screws.
- ❑ The I/O board of the programmer remove including the bearing sheet metal after you have loosened the two securing screws.
- ❑ Insert a new electronic programmer into the machine and secure it by the screws..
- ❑ Reconnect all the connectors and put the little hose back on the level sensor.
- ❑ Close the cover plate of the washing machine.
- ❑ Now you can Switch On the power supply.
- ❑ The display should illuminate.

⚠ **ATTENTION!**

MAKE SURE THAT THE SMALL HOSE OF THE LEVEL SENSOR IS CORRECTLY SECURED BY A FLEXIBLE CLAMP.
IF THE HOSE IS NOT AIR TIGHT THEN THE LEVEL SENSOR WILL NOT MAKE A CORRECT MEASUREMENT.

MAKE SURE THAT YOU DON'T DAMAGE THE FLEX CABLE OF THE KEYPAD WHEN YOU PUT THE WASH COMPUTER BACK INTO THE MACHINE.

9.5. INSTRUCTIONS FOR INSTALLING NEW SOFTWARE

- ❑ Switch the machine power supply off.
- ❑ Open the cover plate of the washing machine.
- ❑ Insert a flash drive containing the software into the USB connector E (of the CPU board).
- ❑ Switch the machine power supply on.
- ❑ The display shows information that the software is being copied from the flash drive into the programmer board.
- ❑ When the copying is finished a prompt to remove the flash drive from the CPU is displayed.
- ❑ Switch the machine power supply off and remove the flash drive.
- ❑ Close the washing machine cover plate.
- ❑ Switch the machine power supply on.
- ❑ If the software is compatible with the previous software: the new software can be used without re-initialization.
- ❑ You have to clear all the error me0ssages in the Service-menu, if you want to make a correct inspection of the functioning of the new installed software.
- ❑ If the software is not 100% compatible with the previous software version:
  - The new software will generate a diagnostic message 35. When fault message 35 occurs you have to reset the settings of the configuration and initialization menu.
  - This can be easily done by Selecting **Reset Factory Settings** in the Configuration Menu.
    ➔ **This is explained in Chapter 3 : Basic Description of Controls.**
  - Go through the Menu items of the Configuration and Initialization Menu one by one to ensure that all the settings do correspond with the ones you prefer.
  - All the Custom Settings will be lost.

10. SPECIFICATION OF YOUR MACHINE

❑ MACHINE DATA

- type :…… ◆ phases : ……
- serial number :…… ◆ frequency : ……
- voltage :…… ◆ output : ……
- water supply : ❑ cold soft ❑ cold hard ❑ hot soft
- heating : ❑ electrical…… kW ❑ hot water ❑ steam

❑ ELECTRONIC DATA

Programmer type :

- serial number of the CPU : ……
- serial number I/O board : ……
- software version : ……
- software date : ……
- keyboard : ……

❑ MACHINE CONFIGURATION DATA

FUNCTION	DATA ENTERED		
◆ MACHINE TYPE	: ……		
◆ BRIGHTNESS DISPLAY	: ……		
◆ SUPPLY VOLTAGE	: ……		
◆ TOTAL N° OF INLETS	: ❑ 2	❑ 3	
◆ DRAIN VALVE 2	: ❑ Yes	❑ No	
◆ WATER RECYCLE INLETS	: ❑ Yes	❑ No	
◆ LIQUID SOAP SUPPLY	: ❑ Yes	❑ No	
◆ MINIMUM LEVEL START SUPPLY	: ……	Units	
◆ TEMPERATURE	: ❑ Celsius	❑ Fahrenheit	
◆ FULL HEATING	: ……	%	
◆ WET CLEANING	: ❑ Yes	❑ No	

❑ MACHINE INITIALIZATION DATA

FUNCTION	DATA ENTERED			
◆ LANGUAGE	: ……			
◆ SERVICE INTERVALL	: ……			
◆ BUZZER TIME	: ……	Seconds		
◆ ALLOW ADVANCE	: ❑ Yes	❑ No		
◆ AUTOMATIC COOLDOWN	: ❑ Yes	❑ No		
◆ WAIT FOR TEMP	: ❑ Yes	❑ No		
◆ MANUAL OVERRIDE	: ❑ Yes	❑ No		
◆ TEMPERATURE BALANCE	: ❑ Yes	❑ No		
◆ WASH MOTOR ON TIME	: ……	Seconds		
◆ WASH MOTOR OFF TIME	: ……	Seconds		
◆ SMART MOTION	: ❑ Yes	❑ No		
◆ HOT WATER HEATER TEMPERATURE	: ❑ 50	❑ 60	❑ 70	❑ 80 °C
◆ TEMP OVERSHOOT PROTECTION	: - ……	%		
◆ MAX. HEATING TIME	: ……	Minutes		
◆ MAX. WATERFILL TIME	: ……	Minutes		
◆ OVERFILL DETECTION	: ……	Units		
◆ EXTERNAL WAIT CONTROL	: ❑ No	❑ Soap	❑ Heating	
◆ PREWASH SOAP INFO	: ❑ Yes	❑ No		
◆ WASH LIQUID SOAP INFO	: ❑ Yes	❑ No		

11. ELECTRONIC COIN SELECTOR

Electronic Coin Selector Type EMP 500.12 v4.

- ♦ Only the Electronic Coin Selectors as specified by the manufacturer can be used on the washing machines of the manufacturer.
- ♦ Reason : the electronic coin selector is preset with coin values and output pulse lengths specific to operate with the wash computer.

- ♦ The coin selector has 2 outputs signals.
  Signal 1 (top wire) corresponds with first group of coins.
  Signal 2 (bottom wire) corresponds with second group of coins.

- ♦ Coins are only accepted by the Electronic Coin Selector when the device works with the right power supply.

- ♦ By 16 dipswitches it is possible to customize the Electronic Coin Selector.
- ♦ Default all dipswitches are in Off position. (bottom)

- ♦ It is possible to block a group of coins.
- ♦ Dipswitch 14 = On, coins group 1 is blocked.
- ♦ Dipswitch 13 = On, coins group 2 is blocked.

- ♦ The electronic coin selector is capable of accepting or blocking coins. If the electronic coin selector is accepting invalid coins (foreign coins), the tolerances can be narrowed. Valid coins may be occasionally rejected, but they will be returned to the customer.

❑ **Example :**

Dipswitch for wide tolerance = On : "Medium" tolerance is selected.

Block coin completely : "Wide", "Medium" & "Narrow" tolerance dipswitches = On.

- ♦ The coin selector allows operation with different coins.
- ♦ It can differentiate between the 0.10 – 0.20 – 0.50 – 1.00 – 2.00 EUR coins
- ♦ The coin selector sends an impulse series corresponding to the number of impulses equal to the value of inserted coins divided by
- ♦ The lowest permissible value. (the lowest permissible value = 0.10 EUR)
  - the 0.10 EUR coin => 1 impulse
  - the 0.20 EUR coin => 2 impulses
  - the 0.50 EUR coin => 5 impulses
  - the 1.00 EUR coin => 10 impulses
  - the 2.00 EUR coin => 20 impulses
- ♦ As each impulse corresponds to the value of 0.10 EUR, the value of coin 1 must be set to 0.10 EUR.

IMPORTANT!

MACHINE TYPE:	
PROGRAMMER: **Xcontrol**	
INSTALLATION DATE:	
INSTALLATION CARRIED OUT BY:	
SERIAL NUMBER:	

ELECTRICAL DETAILS:
.....VOLT.....PHASE.....HZ

NOTE:

ANY CONTACTS WITH YOUR DEALER REGARDING MACHINE SAFETY, OR SPARE PARTS, MUST INCLUDE THE ABOVE IDENTIFICATION.

MAKE CERTAIN TO KEEP THIS MANUAL IN A SECURE PLACE FOR FUTURE REFERENCE.

DEALER: